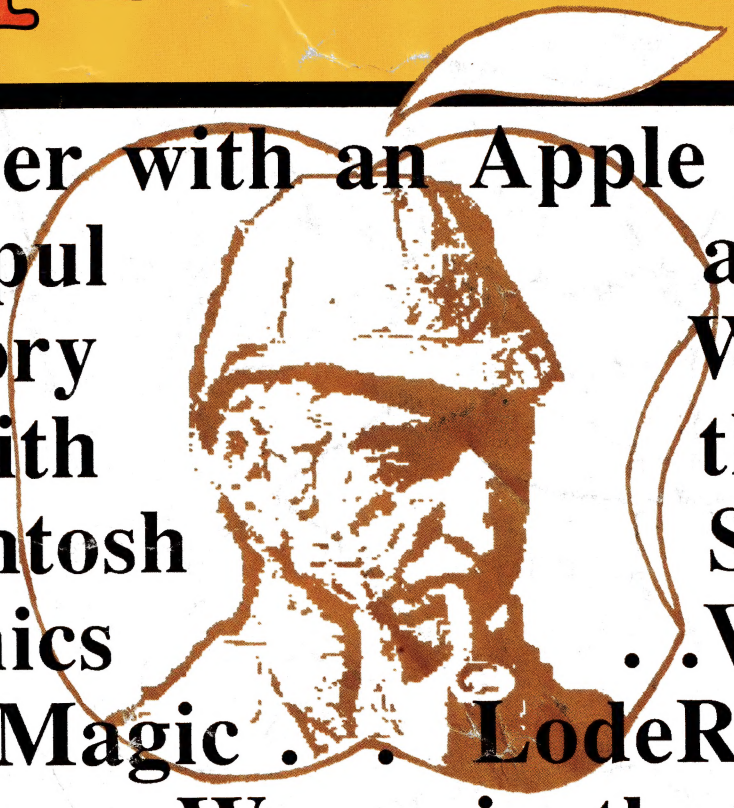
The Independent Magazine June Vol 2 No 4 *$3

The Australian Apple Review



Murder with an Apple . . Manipul ating memory Work- ing with the Macintosh Saving graphics . .Visi- Calc Magic . . LodeRunner Clinic . . Worm in the Apple Reviews . . The latest news from the world of Apple . . Puzzle Corner . . Maths on the Apple . . and much more

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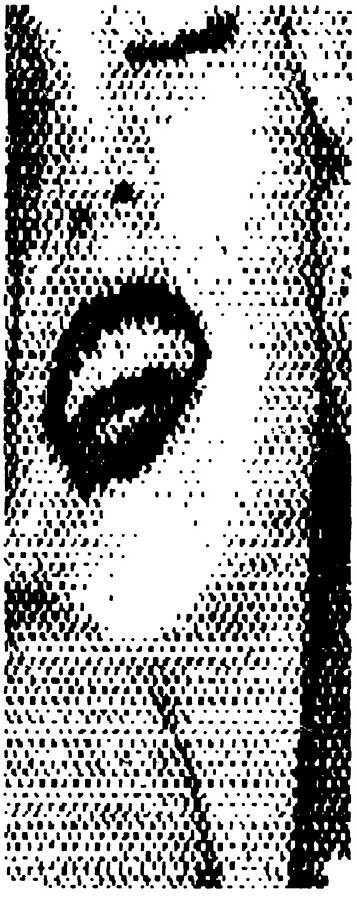

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The Australian Apple Review

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Contents

EDITORIAL

Editor and publisher assembled for a group portrait

Editorial

As from this issue, the waves should be subsiding and the Australian Apple Review returning to an even keel. As Gareth mentioned in the last editorial, April/May was type set on an Apple LaserWriter.

Even bearing in mind the great depth of expertise present, the issue did not proceed as smoothly as all expected. Perhaps if I trace the story of 'At the Terminal' some of the difficulties may become evident.

Firstly, Paul sent his article down the telephone line to the Apple IIe at the office. The text was immediately saved in a DOS text file.

From there, Apdos was run, bringing the file into a CP/M ASCII format. Editing was via *Wordstar.* The file was next processed by ALDS 2, and a DOS text file created. Most people would probably have called enough, enough, but we are a staunch mob.

The file then went via MacTransfer from the II to the Mac and was sub-edited using *The Word.* Finally, a program called *Ready Set Go* set the text into the familiar columns. Downhill now - the file was printed on the LaserWriter and the resulting text set out into pages and off to the printers. The shortest time spent in the whole procedure could easily have been Paul's writing.

With the great Gareth Powell being chained to the Macintosh, and the greater (if only in size) Gene Stephan being chained to Zardax, we're back to 48 pages. The Dinosaurs were no flash in the pan.

In fact we will be continuing to make the *Australian Apple Review* the best value around. The latest (May) *Australian Personal Computer* ran to 204 odd pages. Over 104 were ads, and, there was not one article relating to Apples. Count these pages and count the ads. No, instead of counting them, why not just get into reading them.

Gene Stephan

PUBLISHER'S NOTE

For this issue we decided to try and do the whole lot - writing, editng, typesetting and design - using the Macintosh, the LaserWriter and sundry programs.

I started practising with this set-up in Borneo, (if you don't believe me see if I care) in a city called Bandar Seri Begawan.

Later experience came in Hong Kong where I worked on the first issue of the *Hong Kong Apple Review* with the young and lovely Deborah O'Hara.

You will be reading a lot about the way that these systems can be used for publishing magazines in the future. For the moment know that Ken "Mr Tap Toes" Gunter lent us a ThunderScan, William "Mac the Knife" Bullock helped with the training, David Roman of Apple was most pleasant about letting us use the company's LaserWriter until our own came.

It is a sadness for me to have to report all that Gene Rasputin Stephan did was get in everyone's way.

As far as I know this is the first magazine in Australia to be produced totally on the Macintosh. There are undoubtedly going to be faults. And undoubtedly we will correct them by the next issue.

But what is happening here is that you are taking part in a slice of history which has scarcely been rivalled since Guttenberg and Caxton. These are exciting times we live in.

If this rate of technological revolution keeps up it is only a matter of time before the newspapers are produced on systems not a hundred kilometres from what we are using today.

In fact, to let you all into a secret, I hope to be demonstrating just such a system on ABC television sometime in October when, for the first time, we will be publishing on screen.

I'll let you know well in advance the exact dates so that you can prepare your excuses for switching to *The A Team* instead.

This issue is a major step forward in electronic publishing. It is a small step forward for two men, a great one for publishing.

You are truly taking part in a noble experiment which will change the face of publishing and will eventually affect the way we all live. A genuine social revolution. And how often can anyone say that?

Gareth Powell

Bits and Bytes

****

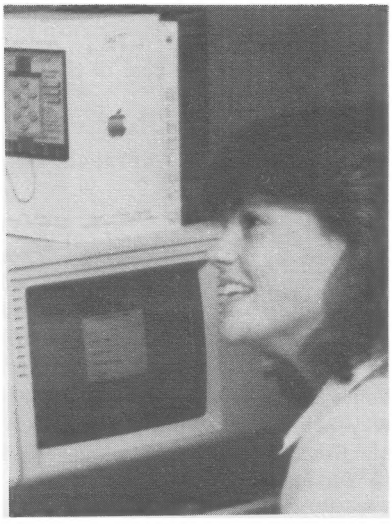
Odds and Sods

Farewell, goodbye

Late April saw the passing of two more computers into the great hereafter.

First to bite the dust was the IBM peanut or PC-jr. Never a machine to make little more than a smudge, let alone a mark, the optimists at IBM maintain that the machine will "still be supported".

The second machine to slide was the Mac XL. Fresh from a rename, the Lisa has been finally laid to rest. I am sure that this occasion will not



be marked by the multitudes as the Lisa, although quite revolutionary when first on the scene was always too highly priced to seriously compete.

Right on the heels of the demise of the Macintosh XL - the letters stand for ex-Lisa - comes the news that it has been adopted as a standard machine by a Computer Personnel consulting agency. Good on them. The company concerned is OU Norman.

CAD on the II

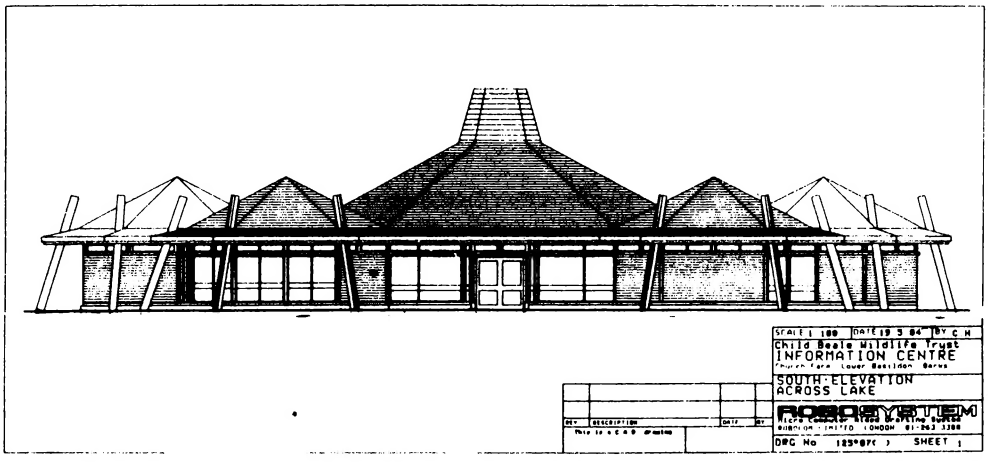
Robocom Australia has just released a new version of their CAD type package of software/hardware for 64K Apple IIs. The hardware consists of a joystick like device which "mimics the natural drawing skills of the draftsman".

Software comes on a number of disks, allowing a comprehensive set of new graphics commands and plotter support.

The system is of UK design with a European user base estimated at 9000. The cost of a system with plotter is around $8,000.

Further information can be obtained from Robocom, P.O. Box 354, Hawthorn, Victoria. Picture below was produced on the Robocom machine and shows the sort of quality results it puts out.We are angling very strongly to have one of these machines to test for what *Playboy* calls an upcoming issue. It will be interesting to compare its capabilities with the Mac and the LaserWriter as a combination.

Our guess is that the two technolgies will gradually merge so that the Mac, possibly with a larger screen, will operate as a fully functional CAD/CAM terminal. If that were to happen CAD/CAM would be univerally available.



More MacSpreads

Earlier this year we were bombarded with paper from Imagineering telling us *Jazz* was on its way. In this issue I have reviewed *Quartet.* Ken Gunter of CompuMusic has *MyOffice* and now Microsoft have joined in with *Excel. Excel,* as you may have surmised, is an integrated package at a time when 'integration' is the catch word. The parts making up the whole are a spreadsheet, database and business graphics. A fat Mac is a necessity.

Although *Excel* does not include a word processor or communications, the $750 you will hand over for your copy will get you *Apple Switcher* as well. This little program will allow Microsoft *Word* to live in memory at the same time as *Excel* so that "switching" of data can occur. The data format which is generated by *Excel* is reported to be

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1-2-3 (IBM) compatible. How this facility could be used except in a LAN environment is difficult to imagine, however, the single user may find it an engaging talking point in mixed company. The most important fact that you, smart reader, will immediately see is missing from these comparisons is that at the time of writing neither *Jazz* nor *Excel* are on sale. They are in the Real Soon Now category. True, we know that *alpha* copies (*alpha* meaning it doesn't work yet) exist and that *beta* copies will soon be distributed. But the amount of vapourware promised in past months has been substantial. So for the time being we will ask you all not to hold your collective breaths until these programs reach the shops. We continue to use *VisiCalc* miserable sinners that we are because we are not yet convinced that these "everything" programs are for us.

COMPARISON CHART

Excel, Jazz and 1-2-3

ITEM	EXCEL	JAZZ	1-2-3
WORKSHEET			
Analysis			
Matrix size, all 256x	16,384	8,192	2,048
Multiple worksheets	Yes	Yes	No
Interactive worksheets	Yes	No	No
Windows in a worksheet	Up to 4	No	2
Named ranges	Yes	Limited	Limited
What if?tables	Unlimited	1 per sheet	1 per sheet
Presentation			
Built-in number formats	19	15	10
Variable fonts,sizes,grids	Yes	Yes	No
Borders for cells/regions	Yes	No	No
Charting			
Multiple chart windows	Yes	Yes	No
Pictorial gallery of chart type	Yes	No	No
Flexibility to move,size objects	Yes	Yes	No
Plot several series at once	Yes	No	Limited
Data			
On-sheet database	Yes	Separate window	Yes
Maximum keys for sorting	3	3	2
One-step extract in worksheet	Yes	No	Yes
Forms design	No	Yes	No

Important to note that this comparison was made by Microsoft

Legal Issues

A fascinating piece of news from the United States concerns lawsuits filed by Lotus for alleged piracy of 1-2-3. Lotus has in the past few months settled twice out of court for undisclosed sums of money. The reason this has been seen as interesting is that in both cases the action has been brought against large companies. In the first instance it was the Rixon company who fell foul of Lotus by spreading at least 10 copies of the original through their modem and multiplex manufacturing concern.

In the second instance, it was Health Group Incorporated (HGI) who were caught with unlicensed copies.

In both cases, the law on making backups was not put to the test due to prior settlement. It was also quite cynically pointed out that only large companies were or would be targeted due to the high probability of settlement rather than legal wrangle.

How did Lotus find out about the alleged infringements?

In the case of Rixon, an unsuspecting user called the Lotus customer support line. In the case of HGI, disgruntled former employees pointed the incriminating finger.

Settle back with a good book

'Publishers Weekly' (United States) has estimated that the number of computer books sold in 1985 will be comparable to fiction.

This is a two-edged sword as the greater the number of books published, the greater the probability of unadulterated garbage being exchanged for hard earned dollars. Still, being optimistic, it may mean that all those topics we found not covered by the manuals finally would be.

Should this bring the cost of books down?

I'm afraid not. Prentice-Hall Australia have just notified us of an average 10 to 15 per cent rise in the cost of their books. Other companies like Bantam/ Corgi who are UK based and not too worried about our dollar report no immediate change.

MacCP/M

Some people tell me they know exactly who is doing the *Australian Apple Review* News simply because there is at least one reference to CP/M each month.

This is a major change from previous attitude when CP/M hardly got a look in. It may come as a complete surprise to them but the stalwartly staid supporter of DOS, loather of WordStar and all CP/M techniques and

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magazine publisher was seen at the //c keyboard plugging away at Wordstar.

Now, IQ Software - United States and to the best of my knowledge not available in Australia yet - is selling a version of CP/M for the Macintosh.

The basic system requires a 128K Mac, but pull-down menus and access to the mouse is not supported. For these luxuries 512K is needed.

Cost of the software is $US395.00 plus $US195.00 for CP/M emulation.

Needless to say, the CP/M disks are completely incompatible with other Mac disks. The publisher has been asked for his opinion of this subject. He says, "They would appear to be attempting to cast very expensive artificial pearls in front of very real swine."

Optical Storage

Although the laser disks may be a way off for whatever reason, the concept of optical storage has not been allowed to stagnate. In the UK an enterprising company has devised a way to use the home video recorder as a back-up for for hard disks.

Depending upon the tape used, storage on the video can exceed 100 Megabytes and as the company is quick to point out, the system has two further virtues. According to a company spokesman, "the machine can be preprogrammed to back-up the data during the night when the computer is not otherwise in demand. During the day, the video recorder can be used as a video recorder." What will they think of next?

PUBLISHER'S NOTE

It is not essential that that publisher and the editor of this august journal should see eye to eye. Indeed, wevery rarely do. This is no bad thing as it leads to a lively and controversial magazine. But someone has got tc sort out this bearded Russian dill on the subject of optical disks. Last Monday I saw them in operation at Olivetti and they were holding 2 gigabytes each. As Gene Stephan did not bother to attend this exhibition he works on the presumption that as he has not seen them they do not exist.

The fact that I have been using one in Hong Kong for, lo, these many months impresses him not in the slightest. He needs to hold it in his hands before he will believe.

He is the sort of man who destroyed my faith in the Tooth Fairy.

Need a sales edge?

Human Edge, the Victorian software corporation, announces a new Mac product aimed at upper management.

'Sales Edge' is an expert system program designed to provide executives with quick and concise sales strategy reports for use with individual clients in individual situations. It instructs the user in aspects of style and personality most likely to gain favourable results.

The Mac version of Sales Edge is priced at $345.00 and versions are available for the II+ and IIe. Further information can be obtained from Alex Babauskis on (03)690-5014.

Top of the Show

Perhaps the people at Epson read *Australian Apple Review.* In the post this month came a pamphlet on the little marvel they exhibited at the recent computer show.

The specs are impressive to say the least, starting with the 2 inch (diagonal) screen described as 'Transmissive Twisted Nematic LCD with color filter". Overall size - the smallest television ever? - is 3 inches by 6.5 ins. by 1.125 inches and around 500 grams with batteries.

The TV can be run from the mains, from batteries and even from the car battery, so you can sit and watch your favourite show while stuck in a traffic jam.

Availability? Epson could not send me a pamphlet as they have been reduced to one (I received a photocopy), and they could not tell me the date they were receiving more pamphlets let alone the date when the units would be finding their way under our pillows.

Once again there is a divergence of view here between the Editor and the Publisher.

Gareth says he bought a television set not much bigger than the Epson over twelve years ago and had it installed under the dashboard of his MG TF 1750. It eventually went on the blink and was given to John Witzig who is a writer, surfer and photographer.

The reason it was given away was that the damn thing was effectively useless. Watching television on a screen this size gives you a severe headache and acute boredom almost simultaneously.

There is a phrase in legal Latin which is *cui bono?* All it means is "who benefits?" With just the marginal exception of the incurably bed-ridden televisions of this size are a waste of time and energy. Epson should go back to making printers - a task at which they have shown superb skills.

Beagle

Beagle, although in computers for about a year, is a newcomer to mail order. When you are new, things never seem to flow smoothly and Beagle have not been spared. Due to some incredible circumstances, delays have been experienced with supply. The girls who run Beagle and seem very decent types however assure me that by the time this issue hits the streets all the back orders will have been posted. As always, overnight success has its problems.

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Where's everyone going?

Have you ever stood at lunchtime near a busy intersection waiting for the 'WALK' sign? Immediately it flashes, and quite often for some time before, people will surge across the street. Some will go from this side to the other while others will come from the other over to here.

This corner to corner movement is reminiscent of software concerns in the local market.

How so?

Lately, companies such as MacGraw-Hill have turned their backs on Apple and IBM software and gone hell for leather with Commodore. OziSoft on the other hand are taking their first steps into the Apple and IBM software market.

For OziSoft the transition appears even more unlikely as games are, in the first stages at least, to play only a minimal part.

Busiware, which is what Ozisoft is calling its serious, has come up with some nice products just about ready for release.IIe and //c users in the small to medium business environment can get excited as for them there is an accounts package made up of several modules each separately available.

Accounts receivable, accounts payable, general ledger and inventory systems in an Australian format with complete integration and payroll all available within the next few months make this an attractive system. It will be one particular package we will be testing out thoroughly because, at the moment, we are on the lookout for a new system to supplement *Cashbook.*

Just playing around

When I was in research, there were no fun and games (except behind closed laboratory doors). At Biotechnology, UNSW, the place where DNA is cloned and other scientific marvels are attempted, the Apple runs hot at play.

The picture shows a member of staff, who may even be a real professor, getting ready with one of his colleagues to launch himself into the real world outside as commercial biotechnologists. Looking at the smile I guess they may eventually be pleased they have their university jobs to fall back on.

Seriously though, the game is a simulation of a major drug producing company. Players must be sensitive to a number of variables in order to produce as cost effectively as possible. Those who don't - well, there's alwavs research.

This picture was processed using Ken Gunter's Thunder Scan which is an electronic gizmo that fits on your ImageWriter and transfers pictures that are fed through back into the Macintosh. It works very well on line drawings, not too bad on contrasty pictures and hardly at all on type. It is still a fantastic machine for artists. and we think that with experience we will be able to use it for line drawings.

Back Copies

There are people who like to collect a full set of every magazine they read. Let us not discourage them for a moment. Our back copy department, under the command of the young and lovely Tina Spathos, has still got some back copies available at $2 each. As always we have tons of some issues, none of others and only a few of some titles.These copies may one day become your grandchildren's heirlooms.

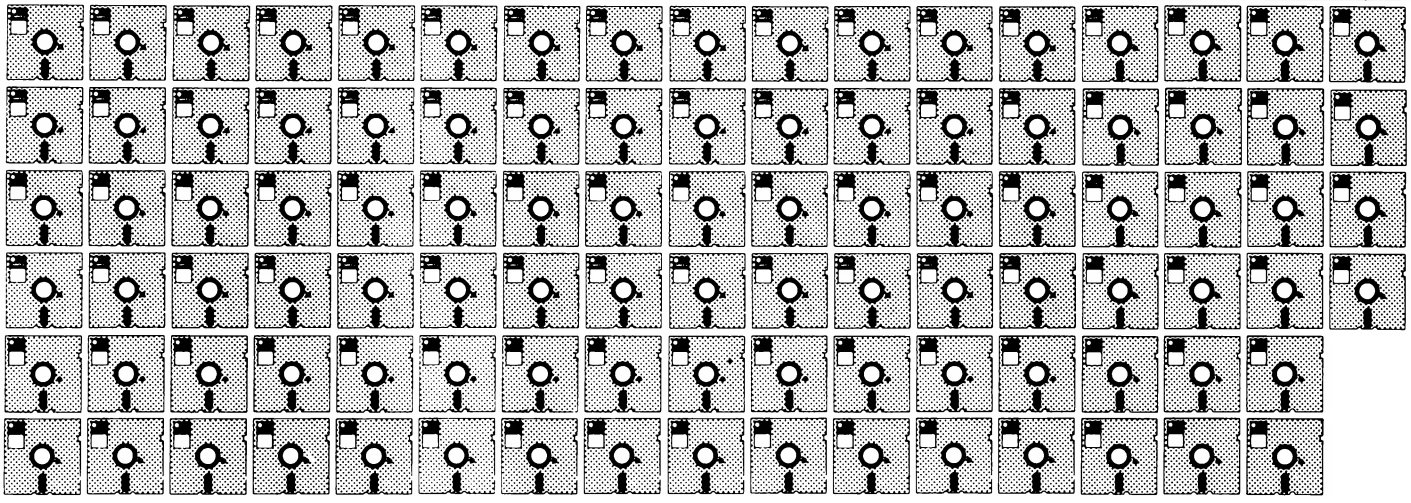
Volume 1, Number 1
Volume 1, Number 3
Volume 1, Number 4
Volume 1, Number 5
Volume 1, Number 6
Volume 1, Number 7
Volume 1, Number 8
Volume 1, Number 9
Volume 1, Number 10
Volume 2, Number 1
Volume 2, Number 3

Send a money order, cheque or BankCard number with the numbers of the copies you want to Tina at Australian Apple Review, 4 Carrington Road, Randwick, NSW 2031. And be damn quick about it.

SPECIAL MAY OFFER

100 Nashua "flippy" Diskettes for only $325.*

*Price Includes Sales Tax.



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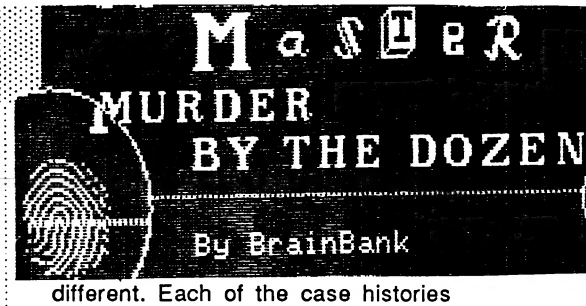
434 NA

GAME



Murder by the Dozen

Reviewed by Gene Stephan

Deductive reasoning game for 1 to 4 players
1 disk
1 instruction booklet
1 clues booklet
1 solutions booklet
1 player aid pad

Requirements: Single drive (works on //c)
Cost : $39.95
Available : Beagle CS

Murder by the Dozen is a highly intriguing piece of software. Broadly speaking, it is an adventure game. Specifically speaking, it is 12 individual murder cases which can be solved alone or in the company of up to four other detectives.

The aim of the game is to find out who-dunnit in the fastest possible time.

The player competes against the clock or against the other players, never against the computer. The role of the computer is primarily to keep track of time and display 'clues'. This makes other people a desirable option when playing, and elevates the game to good family or 'after dinner with friends' entertainment.

With such low computer involvement, the game relies on a number of comparatively hefty booklets. I use the word 'hefty' because the usual amount of documentation for any game is a two sided leaflet. This makes boxed software weigh precious little unless the distributor has stuffed the box with catalogues or cardboard. The '*Murder by the Dozen*' package is heavy due to good quality, well presented booklets, not garbage.

Firstly, the instruction booklet is complete. Quite a statement so I'll back it up with an example.

How often does the background, or the supplementary, or all the information come on the disk? Often, right. So you boot and speed read, the gems scrolling off the top of your screen and into the great never-never.

Slow readers or those who lose interest after the first few screens are undoubtedly and sadly familiar with the procedure of switching off (because of the built-in disk protection schemes), and re-booting just to read the instructions. *Murder by the Dozen* is different. Each of the case histories displayed on the screen for fast readers is presented verbatim in the instruction book for the slow or for those who just need to check. Amazing.

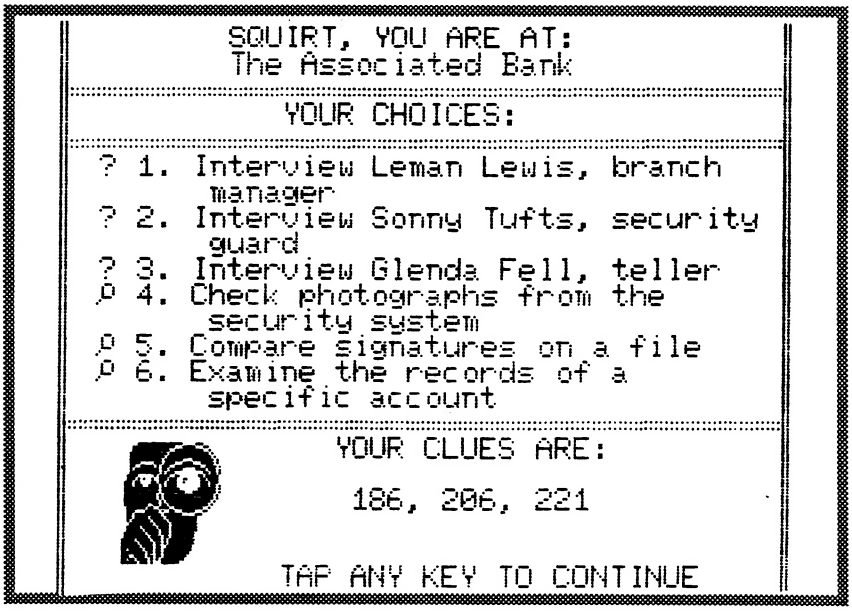
Then there is the clues booklet. Before I proceed, I must explain how the game is played. Detectives set out from specific locations on the map. Each then has the opportunity to interview people, obtain coroner's reports, or travel to new locations. Interviews and reports give clues, but cost time.

Some of the clues may be helpful while others may be 'no clue' or red-herrings. In any case, deduction is required from the information so an arrest can be made.

A little more interaction then follows. The person who believes he/she knows the identity/ies of the killer/s has to explain who and why - in full - to the other players, and then check in the solutions booklet.

Incidentally, the solutions book does not lend itself to browsing as a sheet of red plastic (provided) needs to be placed over the page in order to read the text.

If the solution is correct, the computer will award the winning detective a



Murder by the Dozen

rating which depending upon time used can be World Class Detective or Innocent Bystander with a large range between. If the solution is incorrect, the failure drops out and the remainder continue.

Returning to the clues, these are provided by the computer as a number. The number is matched to one of the 700 clues in the clues booklet. The clues are of course not in any obvious order as can be seen from the included page, so again, browsing will not help as only the computer knows which clues belong to which of the 12 cases.

Player Aid Pad

Finally, there is a pad on which clues and strategies can written or plotted. This is particularly handy when determining the routes to take to interview witnesses or suspects - remember time is of the essence. It also means critical information is not scrawled on the edges of napkins and binned after coffee.

If you haven't guessed it thus far, I was thoroughly impressed with Murder by the Dozen. It is an excellent game and one in which several people can interactively share. We played one case as suggested in teams and you would be amazed at how devious the minds of people you believe you know quite well can become. It is an excellent game for destroying long time friendships, romances and even marriages. On a temporary basis, of course. This is one of those games like Monopoly which shows people's true characters. Not a pretty sight.

One murder took us one long evening. Unfortunately, as with every adventure type game, once the end is reached, the disk may need to be swapped. However, *Murder by the Second Dozen* may be on its way in the future. So, if you have always wanted to try an adventure but thought Zork could be a little overpowering when light entertainment was required, this one is a must.

Case #3—Michael Brenner, Computer Programmer

A call comes into Homicide at 10:55 P.M. Friday. There had been an apparent robbery which ended in a shooting in the Restaurant on the Park's parking lot (R). The victim, a white male between twenty-five and thirty, had been shot three times in the chest and had died before any police units arrived at the scene. The victim's wallet was missing and there was no other form of identification on the body. [illegible] the most even-tempered man I've ever

On Saturday af[illegible] mean all the time.

stating

536. Michael used to swear that one day he would break Lewis' program.

537. No clue.

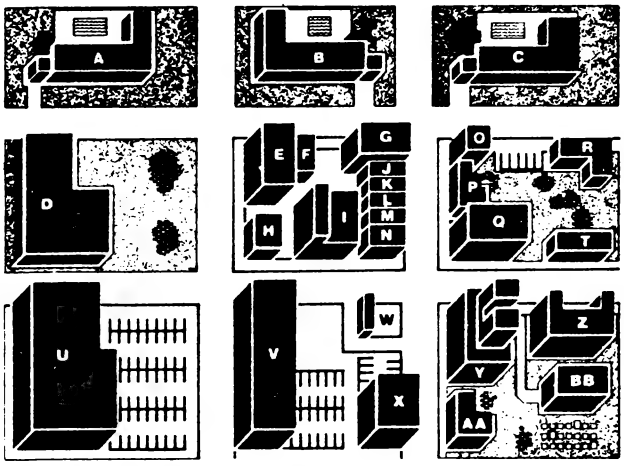
538. Anyway, about ten minutes later, he comes back down and tells me I should forget I ever seen him.

539. She asked me not to call her anymore. What she wanted now was a husband and a family.

540. I remember asking Malcolm to leave at one, when we closed.

541. I've gone straight. I'm clean. If you like, check out the apartment. You won't find anything here.

DETECTIVE _____ **CASE NUMBER** _____



LOCATIONS:

- ☐ A. The Cordwinder House
- ☐ B. The Fenton House
- ☐ C. The Telcher House
- ☐ D. Mid-City High School
- ☐ E. The Associated Bank
- ☐ F. Stone's Drug Store
- ☐ G. The Post Office
- ☐ H. The Library
- ☐ I. The Municipal Building
- ☐ J. Liebman's Jewelry Store
- ☐ K. Roebuck's Flower Shop
- ☐ L. Texas Construction, Inc.
- ☐ M. Martha's Boutique
- ☐ N. The Police Station
- ☐ O. The News Herald
- ☐ P. Dr. Reznick's Office
- ☐ Q. The Garden Apartments
- ☐ R. Restaurant on the Park
- ☐ S. The Park
- ☐ T. Sloan & Williams Law Office
- ☐ U. The Telcher Chemical Plant
- ☐ V. The Warehouse
- ☐ W. Belman's Gas Station
- ☐ X. The Twin Cinema Theaters
- ☐ Y. Sinclair Towers
- ☐ Z. City Hospital
- ☐ AA. Guancial's Bar
- ☐ BB. The Church of St. Peter

CASE HISTORY NOTES _____

INTERVIEWS AND SEARCHES: _____

SUSPECTS: _____

Starring WordStar

by Gene Stephan

This month I will look at Mailmerge, a program used in conjunction with Wordstar to increase the power and flexibility of the wordprocessor, particularly in printing.

WS has provision for the running of related and unrelated programs without leaving its environment. From the <<NO-FILE MENU>>, select R. The prompts will now guide you to enter the name of a file with a .COM extension. If you have for example CAT.COM on a third drive and are logged onto B:, then you could enter C:CAT <RET>. This will display on the screen a directory with file sizes and remaining space on B:.

Similarly, patching of the operating system can be done from WS if the fileDDT.COM is on one of the disks. Those who have only used CP/M 2.23 will not be aware that previous releases did not suport parallel printers such as Epsons. It was necessary to patch all CP/M disks to obtain hard copy. If the patch was not stored, DDT could be used without re-loading WS.

COMMAND? DDT <RET>
DDT VERS 2.2
-SDD2F <RET>
DD2F 3E

Typing 31 <RET> would complete the patch and <CNTRL C> would prompt to return to WS.

This is an example of using non-WS associated files. When accessing this function, consider the size of the files to be run and also remember some programs such as FORMAT can bomb WS.

Provision however is made to run two associated programs - Mailmerge and Spellstar. Both Mailmerge and Spellstar cost about $380 each locally. Though such a dollar investment is usually outside the budget of the casual user, a business or someone doing masses of wordprocessing would certainly find them advantageous.

Spellstar is a spelling checker. It will scan a document, list misspelt words and flag them in text allowing replacement. The greatest advantage of the program is its ability to use supplementary dictionaries.

"The greatest advantage of the program is its ability to use supplementary dictionaries."

No spelling checking program contains all the words in use. Most will, for example flag such words as 'amoeba', 'kilowatt' and 'onomat- opoeia'. If you are a biologist, physicist or writer, you may be annoyed by constant flagging of these types of words. Use of supplementary dictionaries avoids this problem as you create your own word lists. A typical Spellstar screen is produced on the next page.

Mailmerge is a program that merges data into document files and allows greater flexibility in printing. At its most basic level, Mailmerge will complete such tasks as taking mailing lists from one file and form letters from another file to produce individual letters. Further, 'conditional' merges can be done, as for example, letters can be printed for a specific postcode. Before proceeding, it should be mentioned Mailmerge works by using 'dot commands' included in documents or set into files of their own. The format of these commands is identical to the Wordstar dot commands and there is a list below with a full explanation.

Commands for screen displays:

.DM Display Message
.CS Clear Screen

Commands for conditional printing:

.EX Conditional Command ("Except when this is so...")

.IF Conditional Command ("If this is so...")

.EF End Command ("Resume printing here when condition is true")

Commands for merging data:

.DF Define File
.RV Read Variables
.AV Ask (for) Variables
.SV Set Variables

Command for inserting files:

.FI File Insert

Command for multiple copies:

.RP Repeat

Commands for re-forming text at printing time:

.PF Print Time Line Forming
.OJ Output Justification
.IJ Input Justification

Creating a form letter

There are two files required for form letters. The first contains the letter itself and the second the information which is to be merged in. I am stating the obvious because this gives the clue as to the best way to create each file.

'Letter' = wordprocessor, 'information' = database, although the wordprocessor is capable of creating both files.

The reason a database program is far better to use for the variables is due to the greater flexibility it allows in manipulatng data. For example, the form letter may need to be produced in some sorted sequence and it may only use a very small percentage of each record. If dBase II is being used as an accounts/inventory system, a sort and selection of, for instance, name and address fields can be completed quickly and a separate file written to disk just for the letters in question.

For this month however, I will assume only Wordstar and Mailmerge are available. To create the variables file first, run WS and enter N for non-document mode. For the filename use something like NAMES.DTA to distinguish the information contained as data. Enter the data as below. If a comma is to be used in a field, the field MUST be within inverted commas "".

John, Smith, 1 Brown Street, "Sydney, 2000"
Bill, Brown, 1 White St., "Melbourne, 3000"
Peter, Black, 111 Purple and Pink Street, "Perth, 5000

The length of line is not critical, but each 'record' must be terminated with a <RET>. Also, if labels are to be printed from this file, mentally count the characters to avoid printing the ends of extra long names on the roller. Save the file with ^KD.

Now to the text. Enter WS edit with D for normal document mode.

```
.OP
.DF NAMES.DTA
                        . R  V
FIRST,LAST,ADDRESS,CITY
.AV DATE

                    &DATE&

&FIRST& &LAST&
&ADDRESS&
&CITY&

Dear &FIRST&,

     I would like to invite you
to an exclusive preview of some
super new software just
released. I look forward to
seeing you again &FIRST&,

          Best regards,


          Gene.
.PA
```

Then, Mailmerge is set to prompt for a date which will need to be entered from the keyboard.

In the positions where each item is to be inserted, the specific variable is

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"There are two files required for form letters. The first contains the letter itself and the second the information which is to be merged ."

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identified by its name enclosed by ampersands (&). Each variable can be used as often as required - the variable will only change when the next copy is reached.The final command (.PA) tells WS to make a page break. A short invitation such as the one above or a mailing label doesn't require the full 60 odd lines. If labels are to be done then a .PL command will need to be included (see the last issue of AAR). To print these letters, the P command cannot be used. Instead, Mailmerge is invoked with M.

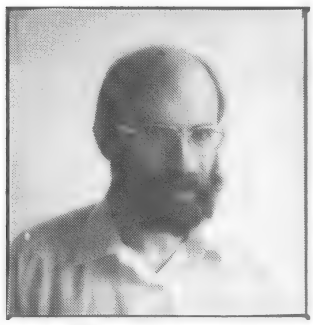
```
SpellStar - Spelling Check Operation[Checking B:SAMPLE .TXT]

SpellStar is now checking your document for misspelled words.

      Number of words in document.....: 422
      Number of different words.....: 261
      Number of words in main dictionary: 20863
      Number of words in supplement.....:
      Number of dictionary words checked: 8733
      Number of misspelled words.....: 28
      Total number of misspellings.....:

SpellStar has completed proofreading your document.
  Enter "L" to list the misspelled words.
  Enter <Return> to flag errors in your text.
  Enter "R" to abandon the check and restart.
```

At the terminal
Sending files



by Paul Zabrs

One of the most effective uses of computer to computer communications is file transfers. These transfers can be between two microcomputers - not necessarily of the same make - or between micro and mainframe.

By far the most common type of exchange involves the TEXT file. The reason for this is most computers can receive and transmit information in ASCII (American Society for Computer Interchange) characters. ASCII is a binary code, in that every character typed on the keyboard is encoded into 8 bits.

In theory 7 bits would have been sufficient, as this would allow for 128 discretely different codes. In practice 8 bits are used to include graphic and

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"One of the most effective uses of computer to computer communications is file transfers."

Greek symbols. In asynchronous serial communications, such as when a modem is used, 3 more bits are usually added (start, stop and parity). This means for every key pressed at the keyboard, the serial interface and modem actually send out 11 bits.

Now what are the uses for such text file transfers? First, imagine that you prepare a letter on your word processor and want to send it to someone fast. There is no problem if the recipient has

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"One of the services offered is mail delivered anywhere in the U.S. within 24 hours. Recently the service has been extended to most of Europe"

---

a computer with a communications facility. He can receive your letter and if he has good software can not only save it directly onto disk but also print it while it is being received.

If you have the money and the need, you can subscribe to the SOURCE in the U.S. One of the services offered is mail delivered anywhere in the U.S. within 24 hours. Recently the service has been extended to most European countries. What actually happens is quite interesting.

Suppose you in Sydney need to urgently send some lengthy information to a person in Anyplace USA. First, you type it, including the destination address, into a word processor. Next you log on to the SOURCE via Midas (this can be done easily and automatically although there is some cost involved). Next you call the SOURCE mail system and transmit the file. And that's it. Of course, you can type the letter while on line, but that is a slow process and usually reserved for millionaires.

What happens next is out of your hands. One of the Source Prime computers transmits your letter to the Post Office installation nearest the place of destination. Here the letter is actually printed, automatically put in a special envelope and then delivered in the traditional manner.

What is described above is an adjunct to electronic mail. OTC's MINERVA electronic mail system, which is based on the SOURCE, but with many other facilities, allows direct access to a computer-based network of correspondents. Memos, messages, reports etc. can be received and sent. If properly used computerised communications can save a lot of time and money.

From the hobbyist's point of view there are also many things which can be done. For example, you can send and receive not only text files, but also programs, including binary programs, data files, spread-sheet overlays and even remotely copy whole disks. All this and more via the innocent appearing telephone.

Some of the more sophisticated transfers can only be achieved between two computers of the same make.

The reason for this lies primarily in the different CPUs found in different computers. For example, an Apple // binary file means precious little to an IBM PC and vice versa. The data may be received but to the foreign processor would be unintelligible. With text files however, there is that large degree of standardization.

Educating the Apple

by Lynne Ryder

This month I would like to tidy my desk so to speak with the following three reviews. Although the second program is not strictly speaking 'educational', it nevertheless does demonstrate the wide range of learning software available for the Apple II - from infants with Eureka programs to manaagers with the Personal Development series.

LIBRARY & MEDIA SKILLS
Tutorial material on using library resources. 2 disks, one loose leaf manual
REQUIREMENTS : 48K, 1 DRIVE
COST : $59.95
AVAILABLE : Micro Nationwide

The program is divided into several separate lesson areas, designed to teach through computer practice rather than explanation and recall. A user friendly format allows the younger children not to become overburdened with the keyboard but rather to be able to respond to each situation with the minimum of keypresses.

Library and Media Skills presents on two disks, three levels of library activities.

SKILLS 1 : The material here is aimed at second to fifth grade children.

The second graders however, will undoubtedly have more than a slight amount of trouble reading the words on the screen and the fifth graders should already be using this information. A tighter age grouping for this section would be third grade and early fourth.

Four areas

The four areas covered are:

(1a) CARD CATALOG 1. The aim of this section is to introduce the library's card indexing system. The activity involves the computer presenting the child with a book title and a set of graphic drawers. Three attempts at selecting the correct drawer are allowed, after which time if success has evaded, the program shows and directs to a tutorial.

I must say here, the authors do give titles which children may either know or have seen or could relate to, as *Where The Wild Things Are'*. Clearly though, such titles would probably be very difficult if not undecipherable to second graders.

(1b) TITLE PAGE. This section could far more easily be covered by the class teacher or at the start of a library lesson. A sample title page is presented and the name of the book, the author, illustrator, publisher and place of publication are highlighted on the screen and described.

The activities involve the presentation of a sample title page with questions as 'Which of the choices below is the AUTHOR of this book?'.

Selection is from multiple choice with single keypress.

(1c) TABLE OF CONTENTS. The aim of this section is give familiarity with the contents page along with the information, not simply page numbers, obtainable at a glance. A graphic sample contents page is presented with questions as 'On what page would you find....' and, 'Is there a chapter about...'.Selection is by single keypress.

(1d) GUIDE WORDS PRACTICE. This section deals with the use of guide words in a dictionary to help locate a word. Again, my doubts of appropriate grade level are justified as it is a little beyond the youngest.

The activity involves the computer giving sample pages with darker defined guide words and asking for the page numbers on which certain other words would be found. As an activity this certainly is a good one.

SKILLS 2 : The material covered here is aimed at grades three to six. The amount of overlap is quite evident and I could see a definite use for having several computers running in order that a range of efficiency could be catered for.

The three areas covered are:

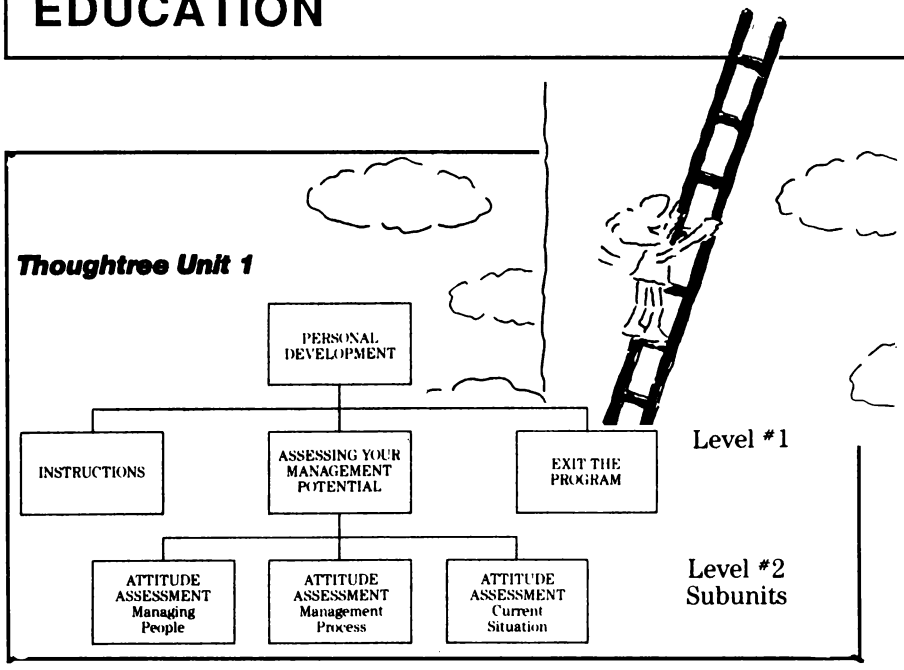
(2a) CARD CATALOG II. Here, the concept of the card catalog is extended to show the child how to find information under subject, title and author. The activity presented involves use of this information in book location using a graphic card.

(2b) THE ENCYCLOPEDIA. Perhaps the most important of all research and study skills is to be able to quickly locate information in a reference text such as an encyclopedia. The physical size of this book is quite often daunting not only to the younger children, but also to many of the older students with whom I have had experience. On this basis, though the encyclopedia is only a glorified dictionary, it is certainly worthy of a separate section.

The program presents a graphic display, but I feel falls short in the activities, by only working with volumes. A better way of presenting the concept would have been to do this section first, and then the Dictionary Guide Words.

(2c) CATALOG CARD. The areas covered here are the Call Number, Author's name, Title of the book, Illustrator, Publishing information and number of pages in the book.

Questions presented require the



Educating the Apple

obtaining of this information from a graphic.

SKILLS 3 (disk 2):Here reference material is dealt with to a greater depth. The aim is to allow the child to determine the best source of information for a particular task. The books dealt with are the *Biographical Dictionary, Encyclopedia, Book of World Records, Almanac, Atlas, Thesaurus* and *Dictionary.* As with the previous disk, if too many mistakes are made, it's back to more practice.

General Overview

I could not say this program drove me to distraction. I can see some very good points, but I also felt a teacher could achieve the same result with a few short lessons.

Where the program could be of use is as an extension activity. By this I mean children who are at the Skill 1 level, could go to the library and use the computer for Skills 2 and 3. A child who would be using his/her own time to go to the library is the one I feel would benefit the most from such an approach. As each section is meant to take 10 to 20 minutes to complete it would be quite suitable for this. .

The program comes with a copyable student record sheet and the errors of 25 children are stored to disk for teacher information. The time factor above plus the lack of limitless numbers of computers in a library or classroom, make me feel the optimal approach is not the one suggested.

Certainly, if you have an Apple, a library, little time and some children straining at the leash, the program is well worth consideration.

PERSONAL DEVELOPMENT
Self study course to improve managerial skills.
From MANAGING FOR SUCCESS SERIES. 3 disks, manual.
REQUIREMENTS : 48K, 1 DRIVE
COST : $79.95
AVAILABLE : Beagle CS

This program attempts to help you understand what makes an effective manager and builds your potential in that direction. Quite a large order for a program I thought when I first booted.

Personal Development consists of three units (one per disk) presented as 'Thoughtrees', for both the Apple and IBM computers. The branches of the Thoughtrees are shown from the manual.Your evaluation is based upon reaction to a series of statements. For example, 'It soon becomes unpleasant to work for people who are very concerned about planning for productivity and efficiency.'

1.Strongly agree
2.Agree
3.Undecided
4.Disagree,
5.Strongly disagree

As you work through, the computer keeps track of responses and finally comes up with a score and some advice. Incidentally, the manual also states 'When you are asked to answer...be candid and realistic'.

Each program supports five users at any time, so interruptions are catered for. Those who have to leave, return to program without the penalty of needing to go back over old ground.

This aspect is a necessity as when I did Unit 1, it took me almost an hour and a half to complete.

The score is based on individual response as compared to the responses of several thousand successful managers collated over about 10 years.

There were several features I found very useful in this program.

The first is it will give a guide to clear thinking.

Stressed are such things as setting goals and objectives, ident- ifying problem areas or worker/student needs and determining further personal development.

We all know to make our goals specific, but sometimes we forget. The program doesn't and is quick to point this out if it becomes evident from the responses. Further, it gives advice that is clearly tried and tested.

On completing the program, I thought it was well worth the effort. I also thought the three disks had actually accomplished what they set out to do. Although the cost of the program may be inhibitary to the casual user, *Managing for Success - Personall Development* is definitely well worth having around a medium to larger office and could probably be put to good use in most Government offices and establishments.

Educating the Apple

PICTURE ABC

- 1 disk
- instruction leaflet

Requirements - 48k
Cost - $39.95
Available - Micro Nationwide.

The third program I have up for review is Picture ABC, written by Greg and Craig Bailey of Cessnock.

I know Gene has tried twisting the arm of Frank Bailey in unsuccessful attempts to try to get him to 'expose himself' and talk about his programs. Unfortunately, Frank is a lovely but very retiring sort of fellow, so the lot has fallen to me to give an unprejudiced review of the software.

Picture ABC is a set of 3 activities designed to allow smaller children some practice firstly with their letters and secondly with the computer.

The three activites are :

1.Type alphabet (easy and hard)
2.Letter guess
3.Picture ABC

In 'Type Alphabet - easy', children are prompted to sequentially find the letters on the keyboard and press the associated key. At the top of the screen the letters are presented as they should appear in the prompt line, so the task is reasonably simple and quite suitable for the age group in question. Incorrect responses are greeted with a buzz from the Apple, while each series of six correct presents a graphic of the letters floating around the screen.

'Type Alphabet - hard', is similar to 'easy', however, there are no prompts at the top of the screen, and the central area is used for displaying the letter pressed. Although this is reinforcement, I thought the program was slowed a little too much with this graphic. For the very young child it may be advantageous, however I felt the majority would not benefit from the delay.

'Letter Guess' is my favourite of the activities. It is not graphically exciting but is fast and has excellent educational value. The alphabet is thrown onto the screen a letter at a time with one letter being omitted.

The child must enter the letter correctly to proceed. If three errors are made, the correct letter is displayed to an accompaniment of something sounding like a police siren.

The game can be repeated as often as required and the letters omitted are random, so several children can congregate around the computer and take turns at playing.

'Picture ABC' completes the disk. Here the child is presented with a graphic and some words for each letter chosen. The graphics are very well done with good detail and clear, easily visible letters even on a monochrome monitor. A good point also, is the words presented are simple enough for the younger children and the alphabet letters are not confined to the beginnings of words.

I cannot think of six simple words beginning with the letter 'X', but there are many which use the letter, as 'vex' and 'six'.

Further, reinforcement is given in that the words have to be completed by hitting the key in question.

Summary

To sum up, it must be mentioned both Greg and Craig are high school students at Cessnock, NSW.

This I think comes out in the activities as they generate a feeling of an older child patiently teaching a younger child.

In content, thought has been applied. In terms of programming, I found no bugs, and the graphics were fast and professional.

Perhaps we should add that the Baileys are one of the few families we know where everyone is interested in the computer and its potential. We expect more programs in the future.

Craig (left) and Greg Bailey talking over a section of Picture ABC with the Apple computer expectant.

PLAYER AID

LodeRunner Clinic - Level 5

by
Gene Stephan

This month's *Loderunner* screen is one of the most interesting as it contains a number of puzzles. The right hand part of the screen is easy enough to solve. It is merely a matter digging one next to the bar before jumping onto it. From there, dig one next to the bar on each level.

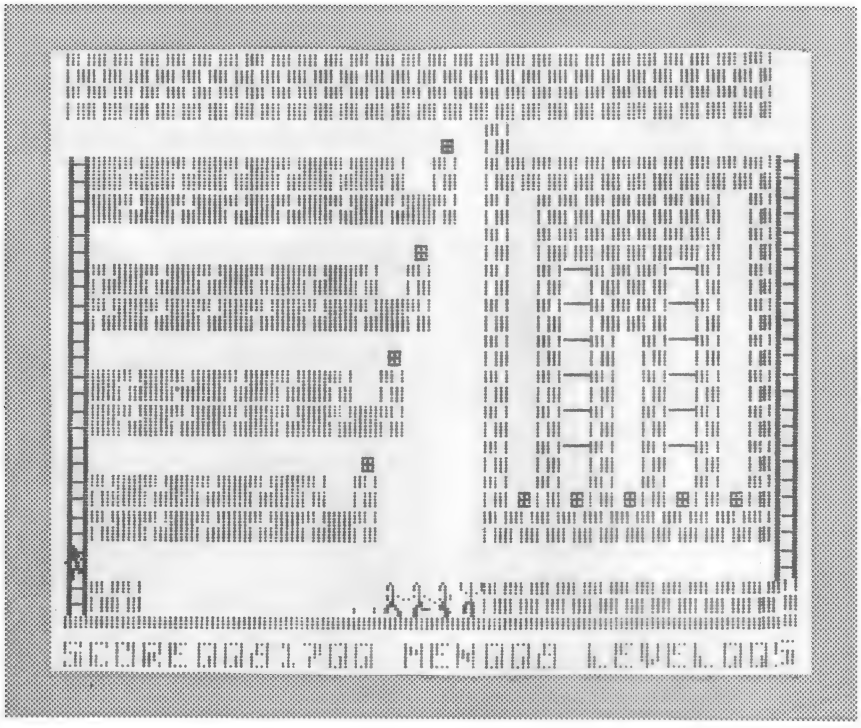
The left hand side, presents a different puzzle. Logic dictates that the men are needed to fill the holes in order to get the barrels. From then on it's trial and error.

The men must be released from the central hole. This can only be achieved with one man at a time AND with completely fluid motion on the part of the player.

You must dig, without hiccup, all bar the last two holes. Then run across and down the ladder. The men will follow and you must kill all bar one.

Now, up and dig out the last two holes.

From here, it's a matter of finding the correct position to stand so the man runs in the direction you require. Once you grab the barrels, kill the man. All four will be required to cross, so sympathy or sportsmanship has no place here.



PUZZLE

Puzzle Corner

There were several answers to the March issue 'What is it' puzzle, but unfortunately, no one identified it correctly. After much deliberation, the fairest solution seemed for me to keep the book. However, as with most fair things, it was kept over for the next issue.

The solution required turning the magazine upside down. From there it should be an easy matter to identify the Macintosh production line at Apple. In view of the difficulties encountered by readers with 'what is it?' puzzles, it's back to the tried and true.

The final date on this little one is the fourth of July, so there's ample time to devise an intricately simple solution.

In the 1940s, Joseph Ellis Trevor of Cornell devised this cryptarithm. Each * can be replaced by a prime - ie. a 2, 3, 5 or 7. Now, all we need is the program which will do it and save our grey cells for more serious pursuits.

```
  ***
   ** x
--------
 ****
****0
---------
*****
---------
```

Can you be ruth and a loving paren

There are many ways for you to be more competitive in the way that you go about your business. (The faint-hearted would call some of these ploys ruthless.)

But there is one way that allows you to improve your business efficiency, and give your kids a head start at the same time.

It's the new Apple IIc.

Apple IIc. The 8 pound heavyweight.

For such a powerful, capable machine, the Apple IIc is extremely compact.

The new Apple weighs just less than 8 pounds, half as much as computers with half its power. It has been designed to be the same size as a 3-ring binder, not a 3-ring circus.

It has over 10,000 software programs written for it. With educational programs that graduate from Spelling to Acid-Based Chemistry.

And with business programs that range from Inventory Control to Sales Analysis.

Apple IIc. The perfect business partner.

When you take your Apple to work, you'll find there's an Apple program to help you keep records, manage finances and prepare, file and retrieve documents. There are many Apple programs written for specific use by people such as farmers, doctors, lawyers and accountants.

With an Apple printer you can easily turn screeds of information into graphs and charts in seconds, not in hours.

Should your office possess a mainframe computer, your Apple can connect into it.

Whether you're working directly with a mainframe program or transferring wads of information onto a program disk for your later use, you will soon see that having an Apple IIc on your desk is a lot smarter than having a dumb terminal.

In no time, your nights and weekends of being office bound, simply because the computer's there, are over.

Apple IIc. The perfect teacher.

When you take the Apple home you'll realise that a perfect, patient inspiring teacher is never far from hand.

After plugging the Apple into a normal television or an optional monitor, the first of 6 self-explanatory programs can be inserted into the built-in disk drive.

Young and old will very quickly realise how simple Apple has made it to master the personal computer.

And in no time at all, young people will find themselves at the door of one of the most unusual libraries ever assembled, the Apple software library.

Even though there are new programs written for the Apple every day, there are currently over 2000 education based programs available.

At their own pace, with the new found

less in business
t at the same time?

concentration that a computer creates, your children can take themselves on a private tuition course that covers virtually every subject on the school curriculum.

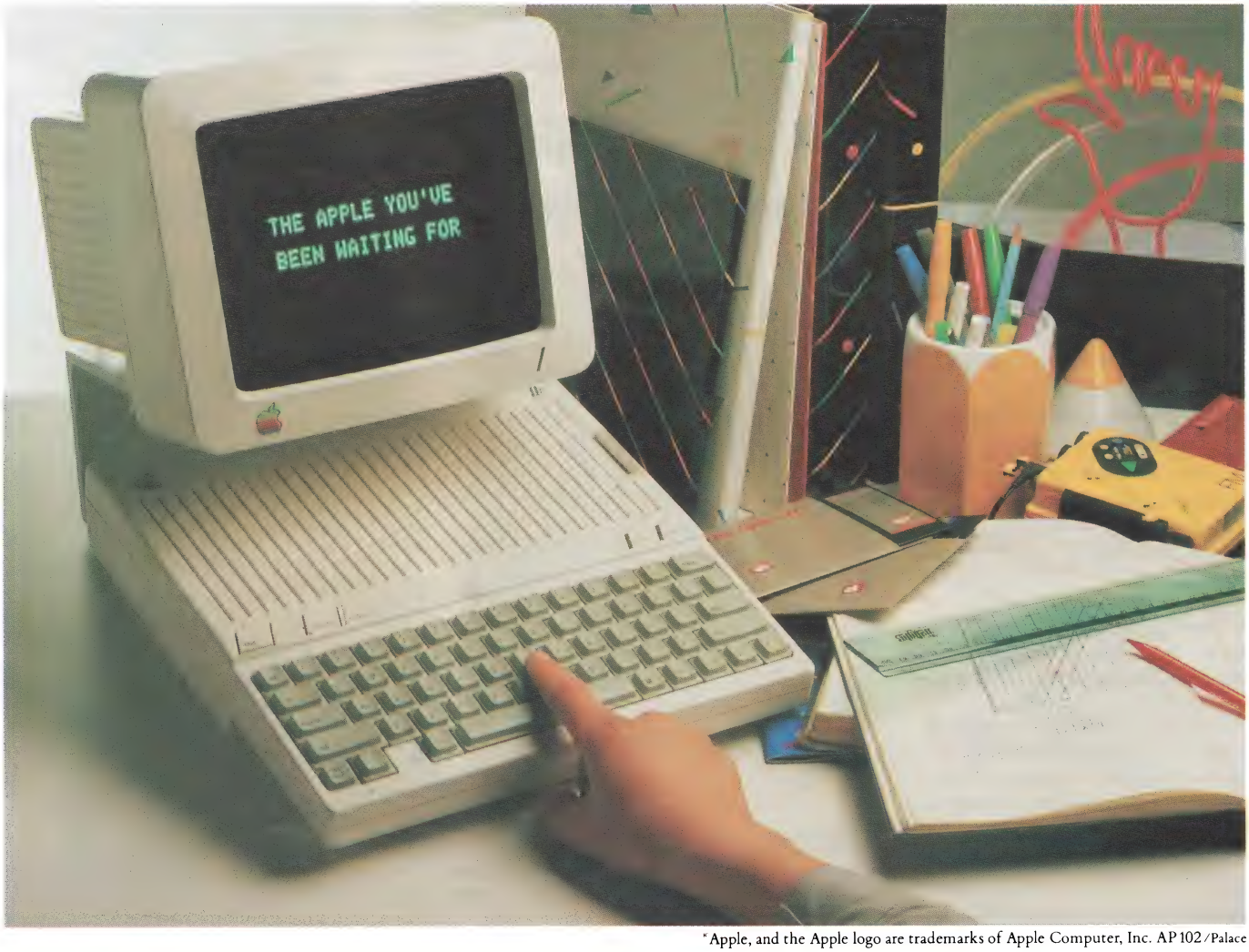
Whether they're learning to read music or a foreign language, your children will be enjoying the considerable advantages of a student to teacher ratio of 1 to 1.

Whatever the subject however, many people believe that familiarity alone with a computer is going to be a tremendous advantage in the future of a young person growing up today.

Who knows, an Apple may give your kids such a head start, they may never even have to be ruthless in business.

For the address of your nearest Apple dealer, phone Sydney 908 9088 or toll-free (008) 221 555.

apple



*Apple, and the Apple logo are trademarks of Apple Computer, Inc. AP 102/Palace

Saving graphics pages

by Gene Stephan

I have had several enquiries over the past few months about how Loderunner, Jumpman and other program screens end up on a graphics supporting dot matrix printer (and then in AAR). This short article will tell all.

The need for such a program arose quite early in my Apple computing days.

Then, I was younger and succumbed to the temptation of games. To sit up into the early morning hours surrounded by hard core gamers - most now divorced - playing memorables such as Apple Invaders, Blitz and Lunar Lander was a frequent occurrence. Unfortunately when one finally called it a night and switched off, the scores would be lost - but there would be witnesses.

Occasionally I would play alone.

Need for hard copy

It was here the need for this program was born. My acquaintances developed the habit of casting serious doubt upon my honesty, credibility and gamesmanship in reporting levels achieved and high scores attained in these times of solitude. Hard copy was essential, but none of the programs would support a printout.

The following program will allow the saving, viewing and printing of these screens. It is quite simple and only makes the assumption that the disk it resides upon can be warm booted (booted without switching the computer off and on). To do this on my II+ is not the easiest with some of the protection schemes around. To facilitate this I have a WILDCARD which can interrupt most of the programs available. On the IIe, it is a matter of swapping game disk for program disk and <CTRL> <OPEN APPLE> <RESET>.

Type in the program and INIT HELLO a blank disk. This will save the program so that it will run on the boot. Then play your game.

When the desired screen is reached either WILDCARD or RESET the system. Doing this does not interfere with the graphics pages of memory though some extraneous specs may be picked up on the IIe. Then run the program.

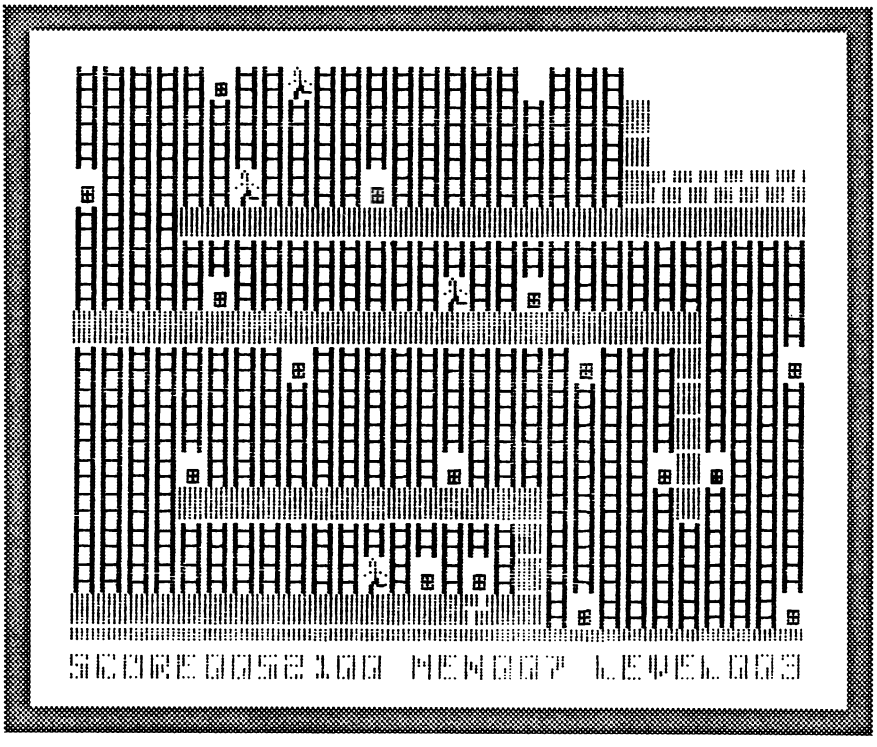
Two points to note are:

1. If the WILDCARD is used do NOT use the C: clear and boot option. Use B.
2. Save both page1 and page2 of memory before switching off.

The reason for point 2 lies in the way most animation is achieved. 'Page flipping' is the term given to alternatively displaying the graphics pages at speed.

Shapes are drawn when not visible, the page is flipped and the shape displayed. Meanwhile the previous shape is erased and redrawn on the hidden page. The ultimate result is apparent motion. Figure 1. shows the same scene from Championship Loderunner with the differences between pages obvious.

One further point - before viewing the screens saved on disk, cold boot the program disk. This is particularly important with the IIe, as garbage appears on the screen unless all memory is previously cleared.



PROGRAM

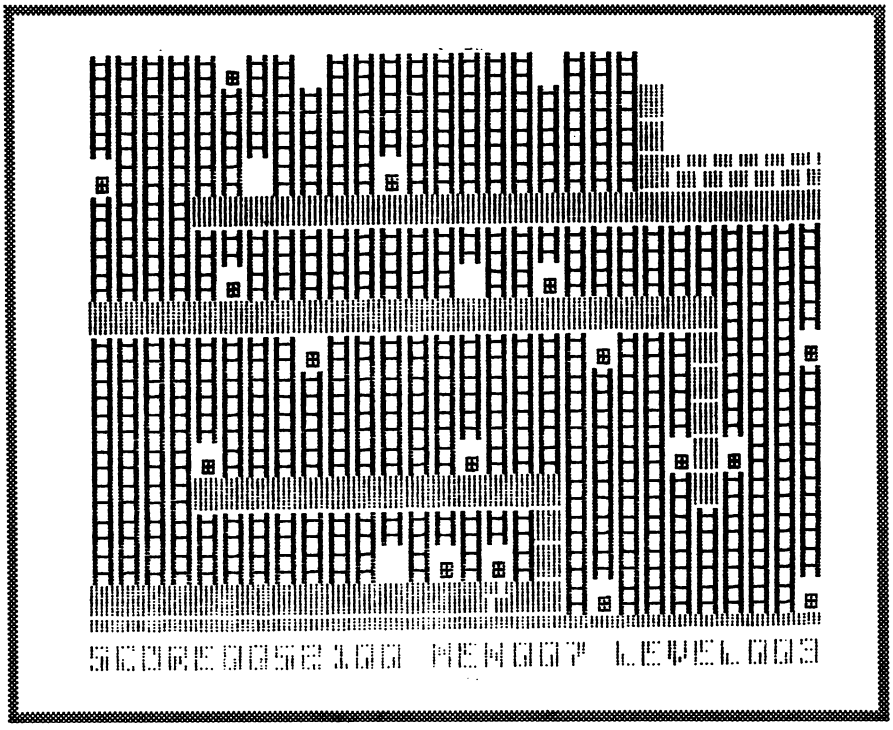
Saving graphics pages

```
]LIST

10  ONERR  GOTO 540
20  HOME : PRINT "FILES ON THIS D
    ISK ARE ...": PRINT
30  PRINT  CHR$ (4);"CATALOG"
40  PRINT : PRINT " PLEASE ENTER
    NAME OF FILE TO LOAD ..OR"
50  PRINT "S TO SAVE, P TO PRINT,
     Q TO QUIT, <RET>  TO VIEW M
    EMORY";: INPUT " ";NAM$
60  IF NAM$ = "S" THEN 440
70  IF NAM$ = "Q" THEN  END
80  IF NAM$ = "P" THEN  PRINT  CHR$
    (4);"RUN PRINT"
90  PRINT : PRINT "PAGE 1 (1) OR
    PAGE 2 (2) ";: GET A
100  PRINT
110  IF NAM$ = "" THEN 140
120  PRINT  CHR$ (4);"BLOAD ";NAM
    $
130  POKE  - 16297,1
140  IF A = 1 THEN 180
150  IF A = 2 THEN 310
160  GOTO 90
170  PRINT  CHR$ (4);"BLOAD ";NAM
    $
180  HOME : POKE  - 16304,1
190  POKE  - 16300,1
200  HOME
210  GET A$
220  TEXT
230  PRINT "SEE AGAIN ?";: GET A$

240  IF A$ = "Y" THEN 180
250  PRINT : PRINT "ANOTHER PICTU
    RE (Y) OR PRINT(P) ";: GET A
    $: PRINT
260  IF A$ = "Y" THEN 20
270  IF A$ = "P" THEN  PRINT  CHR$
    (4);"RUN PRINT"
280  PRINT "SAME PIC OTHER PAGE "
    ;: GET A$: PRINT
290  IF A$ = "Y" THEN  RUN 310
300  GOTO 600
310  HOME : POKE  - 16304,1
320  POKE  - 16299,1
330  HOME
340  GET A$
350  TEXT
360  PRINT "SEE AGAIN ?";: GET A$

370  IF A$ = "Y" THEN 310
380  PRINT : PRINT "ANOTHER PICTU
    RE (Y) OR PRINT (P) ";: GET
    A$: PRINT
390  IF A$ = "Y" THEN 20
400  IF A$ = "P" THEN  PRINT : PRINT
     CHR$ 4;"RUN PRINT"
410  PRINT "SAME PIC OTHER PAGE "
    ;: GET A$: PRINT
420  IF A$ = "Y" THEN 180
430  GOTO 600
440  HOME : VTAB 4
450  INPUT "WHAT NAME TO SAVE AS
    ";SNA$
460  PRINT "PAGE 1 OR 2 ";: GET P
    $: PRINT
470  IF P$ = "2" THEN 520
480  IF P$ = "1" THEN 500
490  GOTO 460
500  PRINT  CHR$ (4);"BSAVE ";SNA
    $;",A$2000,L$2000"; CHR$ (13
    )
510  GOTO 20
520  PRINT  CHR$ (4);"BSAVE ";SNA
    $;",A$4000,L$2000"; CHR$ (13
    )
530  GOTO 20
540  HOME : VTAB 4: PRINT "DOS ER
    ROR ";
550  PRINT  PEEK (222)
560  REM  ******************
570  REM  CHECK ONLY FOR FILE NOT
     ON DISK
580  REM  ******************
590  IF  PEEK (222) = 6 THEN  HOME
    : VTAB 4: PRINT "FILE NOT FO
    UND. HAVE ANOTHER GO ": GOTO
    30
600  END
700  REM  REMEMBER, PRINT WILL NO
    T WORK UNLESS YOUR PRINT DUM
    P IS CALLED 'PRINT'
```



LETTERS

Letters to the editor

I receive quite a number of letters each month at *Australian Apple Review.*

Unfortunately too often I am unable to answer all of these immediately. Letters to the Editor will therefore be a way of keeping up with correspondence, plus it will be a way of sharing some ideas with other readers.

If you feel you can give a better answer or would like to get in touch with one of the letter writers, I will make sure your letter is passed on.

Dear Gene,

I write programs for my class to do such activities as mental arithmetic. Can you tell me how I can add a time limit to the completion of a problem or a set of problems?
P. Jackson, 3621.

Dear Peter,

The simplest technique requires the use of a FOR ... NEXT loop.

The program below is bare bones. If you have more than one problem, line 1000 can be modified to keep track of cumulative time.

The time in seconds incidentally, is an estimate of the time through the loop using a stop watch - in your case, the error. Also, the ';' at the end of Line 30 is critical in order to make the INPUT work properly. For non numeric input, change the A to A$.

Dear Gene,

I have a copy of the Australian Apple Review where the clues for *Zork I* are given. This has been a good help, but I am still stuck on some parts. Could you please send me the phone number and address of a Zork users group so I can obtain some help to finish the game?
L Witt, 3174.

Dear Lother,

No. You have bought the program knowing what it entailed so I know you really, deep down, do not want anyone to interfere with the thrill and exhiliration of solving it yourself.

In any case, I am not certain if such groups exist, except in the imaginations of those who think their misery can be alleviated in any simple way.

The same answer, incidentally to Jay Joseph, with problems in Transylvania.

These sorts of questions bring up some tough ethical problems. Are we doing the right thing by civilisation as we know it today in letting our readers know how to win at *Championship Loderunner* and *Jumpman*? Are we encouraging a trend towards mental idleness that will impair the progress of this great nation of ours? I wonder.

```
10 N1=RND(1)*100:N1=INT(N1)
20 N2=RND(1)*100:N2=INT(N2)
30 PRINT "WHAT IS ";N1;" PLUS ";N2;" "
100 FOR I=1 TO 2000
110 X=PEEK(-16384)
120 IF X>127 THEN 500
130 NEXT
140 PRINT "SORRY, WE'RE TAKING TOO LONG":END
500 INPUT A
510 IF A=N1+N2 THEN PRINT "THAT'S RIGHT !!!":GOTO 1000
520 PRINT "NOT WHEN I WENT TO SCHOOL"
1000 PRINT "AND. IT TOOK YOU ":I/75:" SECONDS"
```

Dear Gene,

Recently I have been writing a program to take care of my family tree database and need some advice on a few things. I own a CAT with an Apple emulatorcard so any help you can give me will be relevant.

My main problem is the program has become too large to fit in memory, so I have segmented it. This method is clumsy and slow because I cannot pass variables from one program to another.

Can you help me by answering the following:

1.Can I , under DOS 3.3, while keeping variables in memory, delete a specific part of a BASIC program or load another program?

2. How do I POKE out the RESET key?

3.How do I place flashing characters in a filename?
G. McPhee, 2287.

Dear Gavin,

Firstly, you must be a disadvantaged sort of bloke with the hardware you possess. My heartfelt commiserations. Owners of unemulated Apples would own a book called '*The DOS Manual*'. Your first question is in fact answered there.

1. Yes, variables can be kept, but the easiest way to do this is with INTEGER BASIC and Chain. The program Chain in Applesoft clears all variables and so is unusable in this context. If you are using Applesoft, then Chain can still be used if your variables are written to disk in the form of a sequential file (or a random access file). They then become available for use with any section of code, and are there even after the computer is switched off. Deleting specific sections of code is also treated in the manuals.

In Applesoft the syntax is DEL <line 1>,<line 2>.

So to delete lines 100 to 230 from a larger program type DEL 100,230 <RET>.

The third answer, in the Apple, POKE 1010, 102:POKE 1011, 213: POKE 1012, 112 will make RESET, RUN.

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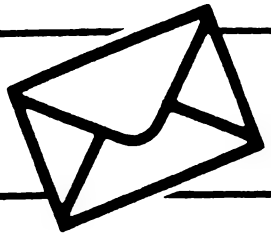

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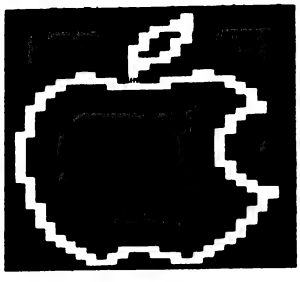
GENE STEPHAN, Editor AAR.



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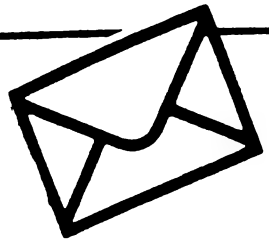

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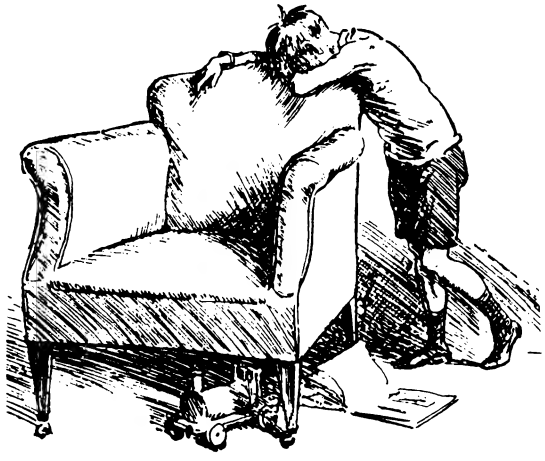

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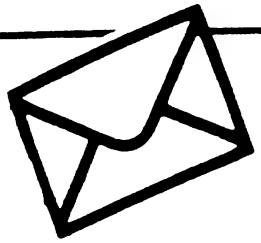

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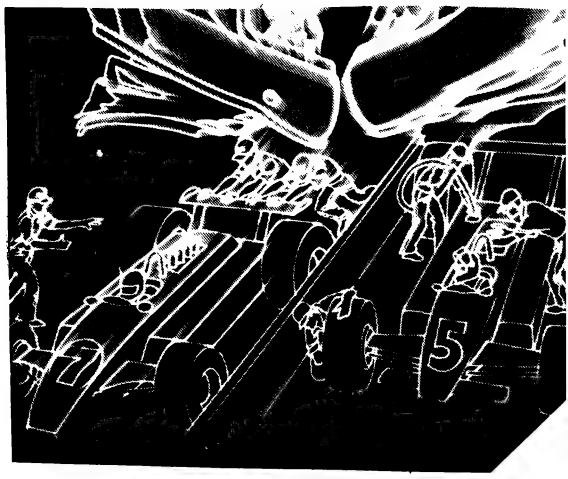
PITSTOP II



by Gene Stephan

PITSTOP II : Arcade
1 disk
1 Instruction leaflet
Requirements: DOS
Cost : $39.95
Available : Beagle CS

I was told by a highly reliable source (Andrew Farrell, editor of the *Australian Commodore Review,* street racer and game player extraordinaire) that Pitstop II was a heart-pumping, thrill-a-second arcade game. Personally, I felt the Apple version did not live up to such praise.

The first annoyance was the screen. This is split so one player controls the car in the top portion while the other controls the car in the lower portion. As a concept, this is excellent as both players have computer generated cars to steer around and one player can never get so far ahead that the other player would be left off-screen.

In a one player game it is distracting, and the reason for the distraction is born of frustration.

Steering

The cars are not exactly what can be termed 'easily steerable'. It takes a good deal of jerking at the joystick to produce movement - probably because the screen is full of objects which are being moved or are changing. So, unless you sit on the edge of the road, you will doubtless be destroyed by one of the obstacle cars. Yet, the computer in the lower screen gets through it all.

Then, there is the question of complexity. In the two player game the keyboard is used. A glance at the key definitions should leave no doubts that those with poor memories or without completely subservient fingers should limit themselves to the joystick. This is particularly true when the pits are entered.

While in the pits tyres may need changing and fuel has to be taken on. The idea and the graphics are great but the poor old Apple slows a little more.

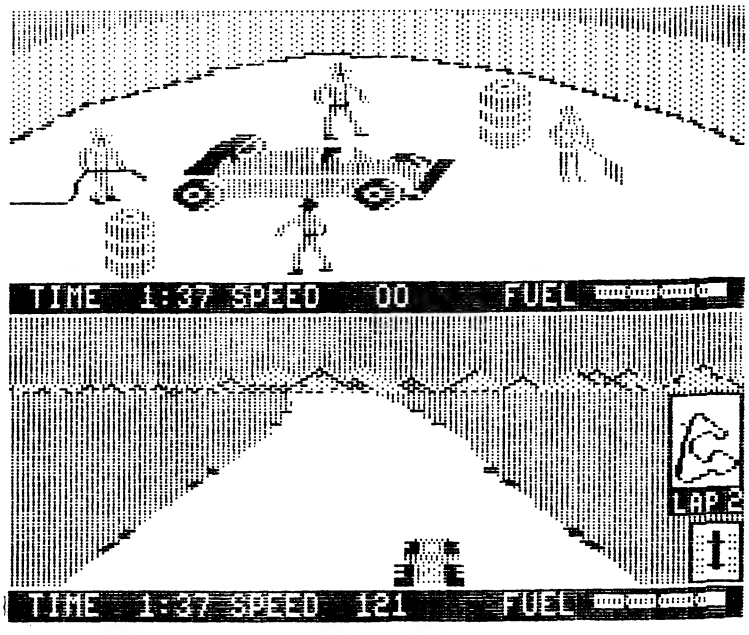
Finally, the rushing around the cars is carried out more with the gusto of a grannies' picnic than a gran prix race.

On the good side, Pitstop II can be a two player game. I think games where the human always plays the computer do tend to become tedious, not to mention asocial. Some of the best games I have played have been against my son Jan where younger reflexes null the advantages of experience. The computer allows us to interact rather than present infinite numbers of screens of targets which ultimately overwhelm.

However, to be completely candid, the game is not as playable as it could have been and I doubt it will be rushed by anyone apart from the most devout fans of racing software.

Keyboard definitions

PLAYER 1	FUNCTION	PLAYER 2
<- or K	Steer left	A
-> or L	Steer right	S
;	Accelerate	D
.	Brake	X
P	Enter pit	E
Arrow keys or-	Move pit cursor or crew member	
K, L, ;,.		A, S, D, X
P	select/deselect crew member	E



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Elizabeth & Creek Sts. 07 31 2330; **QLD** Bundaberg, Medlab Bundaberg Computer Centre, 47A Takalvan St. 071 72 9039; **QLD** Cairns, Computerworld Cairns, Earlville Shopping Centre, 070 54 4502; **QLD** Camp Hill, Computer City, 82 Bennetts Rd. 07 398 6759; **QLD** Chermside, Complete Computer Centre, 605 Gympie Rd. 07 350 1255; **QLD** Cleveland, Cleveland Computer Orchard, 23 Middle St. 07 286 3777; **QLD** Indooroopilly, Myer, Indooroopilly Shoppingtown 07 378 5111; **QLD** Mackay, ComputerLand Mackay, Planella House, Brisbane St. 079 57 2577; **QLD** Maroochydore, ComputerLand Sunshine Coast, 18 Horton Pde, Aerodrome Rd. 071 43 1677; **QLD** Maryborough, Sugar Coast Computers, Bazaar St. Centre, 071 21 6392; **QLD** Mt. Isa, Mt. Isa Computer Centre, 43 Barkly Hwy. 077 43 2929; **QLD** Southport, ComputerLand Gold Coast, 126 Scarborough St. 075 32 8300; **QLD** Springwood, Centrepoint Computer, 3354 Pacific Hwy. 07 209 4766; **QLD** Sth. Brisbane, The Computer Shop, 137 Melbourne St. 07 44 6926; **QLD** Taringa, The Byte Shop, Shop 3, 207 Moggill Rd. 07 371 0711; **QLD** Toowoomba, Toowoomba Computer Centre, 180B Hume St. 076 32 7542; **QLD** Townsville, N.B.E. Compumaster, 268 Charters Towers Rd. 077 75 1711; **QLD** Wondai, Medlab Wondai Electronics, 28B Bramston St. 071 68 5511; **SA** Adelaide, Comp. Programs Machines & Service, 80 South Tce. 08 212 7535; **SA** Adelaide, ComputerLand Adelaide, 122 Gouger St. 08 212 7191; **SA** Adelaide, Myer, 36-38 Rundle Mall, 08 217 0123; **SA** Adelaide, Random Access, 21 Hindmarsh Sq. 08 223 2505; **TAS** Hobart, BusinessWorld, 160 Collins St. 002 23 5377; **TAS** Hobart, The Computer Place, 73 Murray St. 002 34 8777; **TAS** Launceston, The Computer Place, 71 St. John St. 003 34 1477; **VIC** Abbotsford, Prologic, 6/663 Victoria St. 03 429 3188; **VIC** Armadale, The Logic Shop, 1131 High St. 03 20 8767; **VIC** Ballarat, Harman Bros Sales, 602 Sturt St. 053 31 3022; **VIC** Balwyn, Choice Computer Centre, 327 Whitehorse Rd. 03 830 5122; **VIC** Bendigo, Cygnus Computers, 128 Mollison St. 054 42 4666; **VIC** Box Hill, ComputerLand Box Hill, 899 Whitehorse Rd. 03 890 0468; **VIC** Coburg, Metropolitan Business Machine, 338-342 Sydney Rd. 03 383 2222; **VIC** Cranborne, Associated Micro Technology, 33-39 High St. 059 96 4928; **VIC** Dandenong, Rob's Computer Centre, 295 Thomas St. 03 791 2900; **VIC** Doncaster East, Datapro Computer Systems, 5/861 Doncaster Rd. 03 848 8299; **VIC** East Burwood, Astro Educational Services, 1-3 Ruby St. 03 232 4000; **VIC** Essendon, Bus-Stop Computer Systems, 1029 Mt. Alexander Rd. 03 379 6808; **VIC** Footscray, Western Applied Computers, 188 Victoria St. 03 689 8624; **VIC** Frankston, Alpha Research & Development, 9 Wallace Ave. 03 789 4658; **VIC** Frankston, Computers 2000, 29 Ross-Smith Ave. 03 781 4244; **VIC** Geelong, ComputerLand Geelong, 199 Moorabool St. 052 22 2400; **VIC** Geelong, Geelong Computer Centre, 39 Gheringhap St. 052 22 2844; **VIC** Hawthorn East, ComputerLand Camberwell, 399 Riversdale Rd. 03 813 1300; **VIC** Horsham, Winnera Office & School Supplies, 72 Wilson St. 053 82 5511; **VIC** Leongatha, Smith's Leongatha Computer Centre, 10 Blair St. 056 62 2937; **VIC** Melbourne, ComputerLand Melbourne, 123 Lonsdale St. 03 662 2133; **VIC** Melbourne, Myer, 275 Lonsdale St. 03 661 3342; **VIC** Melbourne, Random Access, 555 Collins St. 03 62 1339; **VIC** Melbourne, Select Micro Systems, 1st Fl., 431 St. Kilda Rd. 03 267 1255; **VIC** Melbourne, The Logic Shop, 97 Franklin St. 03 348 1488; **VIC** Mildura, Mildura Office Equipment, 91 Langtree Ave. 050 23 3611; **VIC** Moorabbin, ComputerLand Moorabbin, 911 Nepean Hwy. 03 557 7834; **VIC** Sale, Latrobe Valley Computer Services, 260 York St. 051 44 6155; **VIC** South Melbourne, ComputerLand South Melbourne, 19/37 Albert Rd. 03 266 8647; **VIC** South Melbourne, Craft, Hall & Edward, 28 Clarendon St. 03 690 8022; **VIC** South Melbourne, Insystems, 337 Moray St. 03 690 2899; **VIC** Surrey Hills, IMA Computer Co., 292 Canterbury Rd. 03 836 8835; **VIC** Swan Hill, Cygnus Computers, 198 Belveridge St. 050 32 9011; **WA** Nedlands, Computer Age, 97 Stirling Hwy. 09 389 1122; **WA** Perth, ComputerLand Perth, 170 St. George's Tce. 09 322 7188; **WA** Perth, Myer, 246 Murray St. 09 321 0151; **WA** West Perth, Computer Choice, 1297 Hay St. 09 322 5651.

Manipulating memory
Using extra RAM

by U. Stiehl

If you have an Apple IIe with the extended 80 column card then you have 128K RAM in your machine. As an 8 bit processor such as the Apple's 6502 can only address 65536 memory locations - 64K in practice - the remaining 64K may appear to be a complete waste. Neither DOS nor Applesoft support the extra memory and very few commercial programs make use of it.

In this article, I wish to present machine language subroutines that can be used from your own programs and which make use of the extra RAM.

In terms of software, the major difference between the Apple II+ and IIe is in the softswitches. Softswitches are memory locations which act as toggles for specific functions. Table1 lists all the softswitches in numerical order. The Apple IIe Reference Manual does not mention all softswitches (e.g. $C011 and $C012 are missing), nor does it describe them all correctly (e.g. $C007 does not enable slot ROM, as stated on page 133 of this manual.)

"Softswitches are memory locations which act as toggles for specific functions"

Reading from (LDA, PEEK) or writing to. (STA, POKE) a softswitch has a different effect on the Apple IIe.

Examples: LDA $C000 polls the keyboard, while STA $C000 disables the 80 column store. STA $C005 enables AUX47.5, while LDA $C005 does not have any effect whatsoever. The softswitch table recommends suitable LDA/STA procedures.

There are 4 types of memory management softswitches:

Type 1 read-enables a specified range of memory (e.g. STA $C002 read-enables main 47.5K)

Type 2 write-enables a specified range of memory (e.g. STA $C004 write-enables main 47.5K)

Type 3 read-enables AND write-enables a specified range of memory (e.g. STA $C008 read/write enables main 0.5K = zero page and stack)

Type 4 reads the status of a soft-switch (e.g. LDA $C013 reads the read-enable status of main 47.5K: if bit 7 is set (BMI), main 47.5K is read-enabled; if bit 7 is reset (BPL), main 47.5K is not read-enabled = auxilliary 47.5K is read enabled). Both main 64K RAM and auxilliary 64K RAM are divided in 4 soft- switch-selectable memory areas:

1) $0000-01FF : zero page and stack 0.5K
2) $0200-BFFF : 47.5K (largest area)
3) $D000-DFFF : bank 1 4K ($C000-CFFF virtual)
4) $D000-FFFF : bank 2 12K

The adjacent diagram includes the softswitches that must be thrown to both read-enable and write-enable the respective memory area.

How to use MAIN-AUX-MOVER

In order to use the utility MAIN-AUX-MOVER, it is not necessary to know anything about softswitches. MAIN-AUX-MOVER is designed to move data from $0000-BFFF of main RAM to $0000-FFFF of auxiliary RAM and vice versa. There are two versions:

Version one, listed as source code, is comparatively slow (transfer rate 12.5K/s). However, it checks parameters for validity, saves and restores registers and zero page working area, and is capable of transferring whatever range is defined. In case of illegal parameters a beep will be heard.

"In order to use the utility MAIN-AUX-MOVER, it is not necessary to know anything about softswitches."

Version two, listed as object code, is much faster (transfer rate 40.5K/s), but it is designed to only move entire 256 byte pages.

The origin of both utilities is O = 37888 (=$9400). The program can be called from BASIC by CALL O after having poked appropriate parameters:

O + 3 = move flag: 0 = from main to aux; 1 = from aux to main

O + 4 and O + 5 = low and high byte of aux begin

O + 6 and O + 7 = low and high byte of main begin
O + 8 and O + 9 = low and high byte of main end

Addresses are assumed to be hexadecimal. Moves include beginning and end bytes. To move a single byte at $2000, specify $2000 main begin and $2000 main end. In case of version two, O + 4, O + 6 and O + 8 need not be poked, since these low bytes will be reset to zero. In order to move page $20 ($2000-20FF), specify $2000 main begin and $2000 main end.

Example: Data transfer from $2000-3FFF of main RAM to $0000-1FFF of aux RAM by program version one. Procedure:

```
10 O = 37888
20 POKE O + 3,0 : REM MAIN TO AUX
30 POKE O + 4,0 : POKE O + 5,0 : REM
   $0000 AUX BEGIN
40 POKE O + 6,0 : POKE O + 7,32 : REM $2000 MAIN
BEGIN
50 POKE O + 8,255 : POKE O + 9,63 : REM $3FFF
MAIN END
60 CALL O
```

To make memory management transparent to the user auxiliary RAM may be considered as the entire address range $0000-FFFF including $C000-CFFF, since the move program automatically converts virtual memory $C000-CFFF to $D000-DFFF of bank 1.

Practical Example

Let's assume you want to store 12 bit measurement data as 2 byte integer numbers. Auxiliary RAM comprises 65536 bytes ($10000), so you can store 32768 (65536 : 2 = 32736) integer numbers in auxiliary memory. In your BASIC program you may set up an integer array dimensioned to 8192 numbers:

```
100 DIM A%(8192)
```

To simplify matters, we assume that the array starts at $3FFE with index A%(0), so that A%(1) through A%(8192) reside from $4000 through $7FFF.

Auxiliary RAM can be divided into 4 8192 blocks (8192 x 4 = 32768) as follows:

Block 1: $0000-3FFF: 1-8192
Block 2: $4000-7FFF: 8193-16384
Block 3: $8000-BFFF: 16385-24576
Block 4: $C000-FFFF: 24577-32768

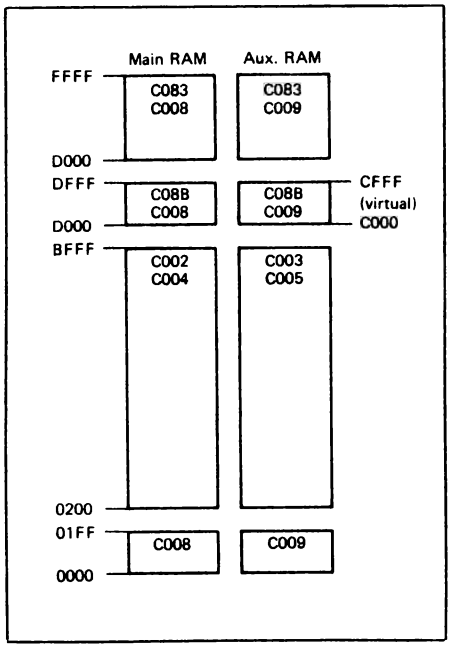
Main RAM $4000-7FFF will be the work area for those 4 data blocks stored in auxilliary RAM. Let's assume you want to process block 4:

a) Auxiliary RAM beginning at $C000 is moved to main RAM $4000-7FFF.

b) Integer numbers in the range A%(24577) through A%(32768) are accessed according to the formula A%(X-24576). Examples:

X = 24577: A%(24577-24576) = A%(1);
X = 32768: A%(32768-24576) = A%(8192).

In this example a block move from/to auxiliary RAM will be performed in about 1/3 of a second with MAIN-AUX-MOVER version two which is fast enough for most applications.



Version 2

```
.
9400- 4C 0A 94 00 00 00 00 20
9408- 00 3F A2 0F BD 0C 95 9D
9410- 00 01 CA 10 F7 A9 00 85
9418- CE 85 FE AD 07 94 85 CF
9420- AD 05 94 85 FF A0 00 A6
9428- FF CC 63 94 F0 03 4C 98
9430- 94 E0 02 90 4F E0 C0 90
9438- 3B E0 D0 90 1A 8E 4D 94
9440- AE 63 C0 AE 63 C0 B1 CE
9448- 8E 09 C0 99 00 FF 8E 0B
9450- C0 C8 D0 F2 4C E9 94 8A
9458- 09 10 8D 6A 94 AE 8B C0
9460- AE 8B C0 B1 CE 8E 09 C0
9468- 99 00 FF 8E 0B C0 C8 D0
9470- F2 4C E9 94 B1 CE 8E 05
9478- C0 91 FE 8E 04 C0 C8 D0
9480- F3 4C E9 94 8E 8E 94 B1
9488- CE 8E 09 C0 99 00 FF 8E
9490- 0B C0 C8 D0 F2 4C E9 94
9498- E0 02 90 3C E0 C0 90 35
94A0- E0 D0 90 17 8E AF 94 AE
94A8- 80 C0 8E 09 C0 B9 00 FF
94B0- 8E 0B C0 91 CE C8 D0 F2
94B8- 4C E9 94 8A 09 10 8D C9
94C0- 94 AE 8B C0 8E 09 C0 B9
94C8- 00 FF 8E 0B C0 91 CE C8
94D0- D0 F2 4C E9 94 4C 00 01
94D8- 8E E0 94 8E 09 C0 B9 C0
94E0- FF 8E 0B C0 91 CE C8 D0
94E8- F2 E6 FF E6 CF A5 CF CD
94F0- 09 94 90 05 F0 03 4C FC
94F8- 94 4C 27 94 8E 02 C0 8E
9500- 04 C0 8E 0B C0 AE 81 C0
9508- AE 81 C0 60 8E 03 C0 B1
9510- FE 8E 02 C0 91 CE C8 D0
9518- F3 4C E9 94 00 00 00 00
.
```

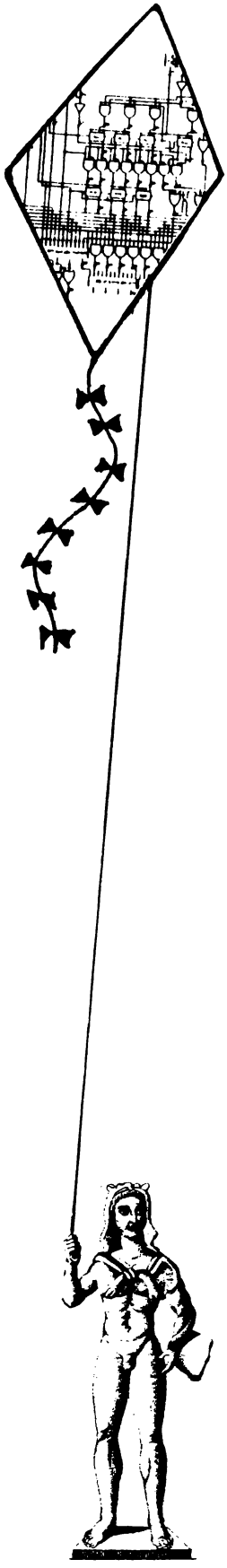
PROGRAMMING

Manipulating Memory using extra RAM

```
LDA $C000 READ KEYBOARD
STA $C000 DISABLE 80COL STORE
STA $C001 ENABLE 80COL STORE
STA $C002 READ MAIN47.5
STA $C003 READ AUX47.5
STA $C004 WRITE MAIN47.5
STA $C005 WRITE AUX47.5
STA $C006 ENABLE SLOT C100-CFFF
STA $C007 ENABLE INTERNAL C100-CFFF
STA $C008 READ/WRITE MAIN ZP+BANK
STA $C009 READ/WRITE AUX. ZP+BANK
STA $C00A ENABLE INTERNAL C300-C3FF
STA $C00B ENABLE SLOT C300-C3FF
STA $C00C DISPLAY 40COL
STA $C00D DISPLAY 80COL
STA $C00E DISABLE ALTCHARSET
STA $C00F ENABLE ALTCHARSET
LDA $C010 KEYBOARD STROBE
LDA $C011 BPL BANK1 SELECTED
          BMI BANK2 SELECTED
LDA $C012 BPL READ ROM12
          BMI READ BANK
LDA $C013 BPL MAIN48 READ ENABLED
          BMI AUX47.5 READ ENABLED
LDA $C014 BPL MAIN48 WRITE ENABLED
          BMI AUX47.5 WRITE ENABLED
LDA $C015 BPL SLOT C100-CFFF ACTIVE
          BMI INTERNAL C100-CFFF ACTIVE
LDA $C016 BPL MAIN ZP+BANK ACTIVE
          BMI AUX. ZP+BANK ACTIVE
LDA $C017 BPL INTERNAL C300-C3FF ACTIVE
          BMI SLOT C300-C3FF ACTIVE
LDA $C018 BPL 80COL STORE OFF
          BMI 80COL STORE ON
LDA $C019 VERTICAL BLANKING STATUS
LDA $C01A BPL GRAPHICS MODE ACTIVE
          BMI TEXT MODE ACTIVE
LDA $C01B BPL MIXED MODE OFF
          BMI MIXED MODE ON
LDA $C01C BPL PAGE 1 ACTIVE
          BMI PAGE 2 ACTIVE
LDA $C01D BPL LO-RES MODE ON
          BMI HI-RES MODE ON
LDA $C01E BPL ALTCHARSET OFF
          BMI ALTCHARSET ON
LDA $C01F BPL 40COL DISPLAY ACTIVE
          BMI 80COL DISPLAY ACTIVE
LDA $C020 CASSETTE OUT
LDA $C030 CLICK SPEAKER
LDA $C040 UTILITY STROBE
LDA $C050 ENABLE GRAPHICS MODE
LDA $C051 ENABLE TEXT MODE
LDA $C052 DISABLE MIXED MODE
LDA $C053 ENABLE MIXED MODE
LDA $C054 ENABLE PAGE 1
LDA $C055 ENABLE PAGE 2
LDA $C056 ENABLE LO-RES MODE
LDA $C057 ENABLE HI-RES MODE
LDA $C058 ANNUNCIATOR 0 OFF
LDA $C059 ANNUNCIATOR 0 ON
LDA $C05A ANNUNCIATOR 1 OFF
LDA $C05B ANNUNCIATOR 1 ON
LDA $C05C ANNUNCIATOR 2 OFF
LDA $C05D ANNUNCIATOR 2 ON
LDA $C05E ANNUNCIATOR 3 OFF
LDA $C05F ANNUNCIATOR 3 ON
LDA $C060 CASSETTE IN
LDA $C061 SWITCH INPUT 0 = OPEN APPLE
LDA $C062 SWITCH INPUT 1 = SOLID APPLE
LDA $C063 SWITCH INPUT 2
LDA $C064 ANALOG INPUT 0
LDA $C065 ANALOG INPUT 1
LDA $C066 ANALOG INPUT 2
LDA $C067 ANALOG INPUT 3
LDA $C070 ANALOG INPUT STROBE
LDA $C080 READ BANK2
LDA $C081 (TWICE) WRITE BANK2, READ ROM12
LDA $C082 READ ROM12
LDA $C083 (TWICE) WRITE/READ BANK2
          ($C084-$C087 DUPLICATES $C080-$C083)
LDA $C088 READ BANK1
LDA $C089 (TWICE) WRITE BANK1, READ ROM12
LDA $C08A READ ROM12
LDA $C08B (TWICE) WRITE/READ BANK1
          ($C08C-$C08F DUPLICATES $C088-$C08B)
```

Version 1

```
                    1  ******************************
                    2  *   MAINRAM <> AUXRAM MOVER   *
                    3  ******************************
                    4  *
                    5  *   FOR APPLE IIE 64K CARD
                    6  *    BY U.STIEHL/OCT.1983
                    7  *
                    8  * VIRTUAL     PHYSICAL
                    9  * ---------   -----------------
                   10  * 0000-01FF   0000-01FF AUXZP
                   11  * 0200-BFFF   0200-BFFF AUX47.5
                   12  * C000-CFFF   D300-DFFF AUXBK1
                   13  * D000-FFFF   D000-DFFF AUXBK2
                   14  * ---------   -----------------
                   15  *
                   16          ORG  $9400      ;37888
                   17  *
9400: 4C 0A 94     18          JMP  SAVER      ;ORIGIN
                   19  *
                   20  *******  POKE PARAMETERS  ********
                   21  *
                   22  * FLAG 0 = MAIN => AUX
                   23  * FLAG 1 = AUX  => MAIN
                   24  *
9403: 00           25  FLAG    HEX  00         ;0+3
                   26  *
                   27  * AUXILIARY MEMORY BEGIN LOW/HIGH
                   28  *
9404: 00           29  AUXBL   HEX  00         ;0+4
9405: 00           30  AUXBH   HEX  00         ;0+5
                   31  *
                   32  * MAIN MEMORY BEGIN LOW/HIGH
                   33  *
9406: 00           34  MAINBL  HEX  00         ;0+6
9407: 20           35  MAINBH  HEX  20         ;0+7
                   36  *
                   37  * MAIN MEMORY END LOW/HIGH
                   38  *
9408: FF           39  MAINEL  HEX  FF         ;0+8
9409: 3F           40  MAINEH  HEX  3F         ;0+9
                   41  *
                   42  *
                   43  MB      EQU  $CE        ;MAINB
                   44  AB      EQU  $FE        ;AUXB
                   45  STACK   EQU  $100
                   46  *
                   47  *********CHECK PARAMETERS********
                   48  *
                   49  * SAVE REGISTERS AND ZERO-PAGE
                   51  *
940A: 8D D8 95     52  SAVER   STA  REGISTER
940D: 8E B9 95     53          STX  REGISTER+1
9410: 8C BA 95     54          STY  REGISTER+2
9413: A5 CE        55          LDA  MB
9415: 8D B4 95     56          STA  ZERO
9418: A5 CF        57          LDA  MB+1
941A: 8D B5 95     58          STA  ZERO+1
941D: A5 FE        59          LDA  AB
941F: 8D B6 95     60          STA  ZERO+2
9422: A5 FF        61          LDA  AB+1
9424: 8D B7 95     62          STA  ZERO+3
9427: 08           63          PHP             ;STATUS
9428: D8           64          CLD
                   65  *
                   66  * 80 COLUMN CARD PR#3 ON ?
                   67  *
9429: AD 18 C0     68          LDA  $C018      ;ON?
942C: 30 40        69          BMI  ERROR      ;YES!
                   70  *
                   71  * FLAG <= 1 ?
                   72  *
942E: AD 03 94     73          LDA  FLAG
9431: C9 02        74          CMP  #$02
9433: B0 39        75          BCS  ERROR
                   76  *
                   77  * 0200 >= MAIN <= BFFF ?
                   78  *
9435: AD 07 94     79          LDA  MAINBH
9438: C9 02        80          CMP  #$02       ;<02
943A: 90 32        81          BCC  ERROR
943C: C9 C0        82          CMP  #$C0       ;>=C0
943E: B0 2E        83          BCS  ERROR
                   84
9440: AD 09 94     85          LDA  MAINEH
9443: C9 02        86          CMP  #$02       ;<02
9445: 90 27        87          BCC  ERROR
```



```
9447: C9 C0     88              CMP  #$C0        ;>=C0
9449: B0 23     89              BCS  ERROR
                90  *
                91  * AUXB + (MAINE - MAINB) < FFFF ?
                92  *
944B: 38        93              SEC
944C: AD 08 94  94              LDA  MAINEL
944F: ED 06 94  95              SBC  MAINBL
9452: 85 CE     96              STA  MB
9454: AD 09 94  97              LDA  MAINEH
9457: ED 07 94  98              SBC  MAINBH
945A: 85 CF     99              STA  MB+1
945C: 90 10     101             BCC  ERROR      ;UNDERFL
                102 *
945E: 18        103             CLC
945F: AD 04 94  104             LDA  AUXBL
9462: 65 CE     105             ADC  MB
9464: AD 05 94  106             LDA  AUXBH
9467: 65 CF     107             ADC  MB+1
9469: B0 03     108             BCS  ERROR      ;OVERFL
946B: 4C 76 94  109             JMP  START
946E: A9 87     110 ERROR       LDA  #$87       ;BELL
9470: 20 ED FD  111             JSR  $FDED      ;PRINT
9473: 4C 8A 95  112             JMP  RESTORER
                113 *
                114 *--------START--------------------
                115 *
9476: A2 0A     116 START       LDX  #10
                117 *
                118 * TRANSFER READ AUX $200-BFFF
                119 * TO MEMORY OUTSIDE $200-BFFF
                120 *
9478: BD A9 95  121 STACK1      LDA  STACK2,X
947B: 9D 00 01  122             STA  STACK,X    ;$0100
947E: CA        123             DEX
947F: 10 F7     124             BPL  STACK1
                125 *
9481: AD 06 94  126             LDA  MAINBL
9484: 85 CE     127             STA  MB
9486: AD 07 94  128             LDA  MAINBH
9489: 85 CF     129             STA  MB+1
                130 *
948B: AD 04 94  131             LDA  AUXBL
948E: 85 FE     132             STA  AB
9490: AD 05 94  133             LDA  AUXBH
9493: 85 FF     134             STA  AB+1
                135 *
9495: A0 00     136             LDY  #0         ;Y=0
                137 *
                138 *-------- LOOP ------------------
                139 *
9497: A6 FF     140 LOOP        LDX  AB+1       ;PAGE
9499: CC 03 94  141             CPY  FLAG
949C: F0 03     142             BEQ  MAINAUX    ;0
949E: 4C 07 95  143             JMP  AUXMAIN    ;1
                144 *
                145 *-------- MAIN TO AUX -----------
                146 *
94A1: B1 CE     147 MAINAUX     LDA  (MB),Y     ;LOAD
                148 *
94A3: E0 02     149             CPX  #$02       ;<$0200
94A5: 90 4C     151             BCC  M4
94A7: E0 C0     152             CPX  #$C0       ;<$C000
94A9: 90 3D     153             BCC  M3
94AB: E0 D0     154             CPX  #$D0       ;<$D000
94AD: 90 1A     155             BCC  M2
                156 *
                157 * D000-FFFF BANK2
                158 *
94AF: 8E C2 94  159 M1          STX  BANK2WR+2
94B2: A6 FE     160             LDX  AB
94B4: 8E C1 94  161             STX  BANK2WR+1
94B7: AE 83 C0  162             LDX  $C083
94BA: AE 83 C0  163             LDX  $C083      ;RD/WR
94BD: 8E 69 C0  164             STX  $C069      ;AUXZP
94C0: 8D FF FF  165 BANK2WR     STA  $FFFF      ;DUMMY
94C3: 8E 08 C0  166             STX  $C008      ;MAINZP
94C6: 4C 5A 95  167             JMP  II0
                168 *
                169 * C000-CFFF => D000-DFFF BANK1
                170 *
94C9: 8A        171 M2          TXA
94CA: 09 10     172             ORA  #$0010000  ;CX>DX
94CC: 8D E1 94  173             STA  BANK1WR+2
94CF: A6 FE     174             LDX  AB
94D1: 8E D0 94  175             STX  BANK1WR+1
94D4: B1 CE     176             LDA  (MB),Y
94D6: AE 8B C0  177             LDX  $C08B
94D9: AE 8B C0  178             LDX  $C08B      ;RD/WR
94DC: 8E 69 C0  179             STX  $C069      ;AUXZP
94DF: 8D FF FF  180 BANK1WR     STA  $FFFF      ;DUMMY
94E2: 8E 08 C0  181             STX  $C008      ;MAINZP
94E5: 4C 5A 95  182             JMP  II0
                183 *
                184 * 0200-BFFF
                185 *
94E8: 8E 05 C0  186 M3          STX  $C005      ;AUXWR
94EB: 91 FE     187             STA  (AB),Y
94ED: 8E 04 C0  188             STX  $C004      ;MAINWR
94F0: 4C 5A 95  189             JMP  II0
                190 *
                191 * 0000-01FF
                192 *
94F3: 8E 00 95  193 M4          STX  AUXZPWR+2
94F6: A6 FE     194             LDX  AB
94F8: 8E FF 94  195             STX  AUXZPWR+1
94FB: 8E 69 C0  196             STX  $C069      ;AUXZP
94FE: 8D FF FF  197 AUXZPWR     STA  $FFFF      ;DUMMY

9501: 8E 08 C0  198             STX  $C008      ;MAINZP
9504: 4C 5A 95  199             JMP  II0
                201 *
                202 *-------- AUX TO MAIN -----------
                203 *
9507: E0 02     204 AUXMAIN     CPX  #$02       ;<$0200
9509: 90 3C     205             BCC  A4
950B: E0 C0     206             CPX  #$C0       ;<$C000
950D: 90 35     207             BCC  A3
950F: E0 D0     208             CPX  #$D0       ;<$D000
9511: 90 17     209             BCC  A2
                210 *
                211 * D000-FFFF BANK2
                212 *
9513: 8E 23 95  213 A1          STX  BANK2RD+2
9516: A6 FE     214             LDX  AB
9518: 8E 22 95  215             STX  BANK2RD+1
951B: AE 80 C0  216             LDX  $C080      ;RDBK2
951E: 8E 69 C0  217             STX  $C069      ;AUXZP
9521: AD FF FF  218 BANK2RD     LDA  $FFFF      ;DUMMY
9524: 8E 08 C0  219             STX  $C008      ;MAINZP
9527: 4C 58 95  220             JMP  II
                221 *
                222 * C000-CFFF => D000-DFFF BANK1
                223 *
952A: 8A        224 A2          TXA
952B: 09 10     225             ORA  #$0010000  ;CX>DX
952D: 8D 3D 95  226             STA  BANK1RD+2
9530: A6 FE     227             LDX  AB
9532: 8E 3C 95  228             STX  BANK1RD+1
9535: AE 88 C0  229             LDX  $C088      ;RDBK1
9538: 8E 69 C0  230             STX  $C069      ;AUXZP
953B: AD FF FF  231 BANK1RD     LDA  $FFFF      ;DUMMY
953E: 8E 08 C0  232             STX  $C008      ;MAINZP
9541: 4C 58 95  233             JMP  II
                234 *
                235 * 0200-BFFF
                236 *
9544: 4C 00 01  237 A3          JMP  STACK
                238 *
                239 * 0000-01FF
                240 *
9547: 8E 54 95  241 A4          STX  AUXZPRD+2
954A: A6 FE     242             LDX  AB
954C: 8E 53 95  243             STX  AUXZPRD+1
954F: 8E 69 C0  244             STX  $C069      ;AUXZP
9552: AD FF FF  245 AUXZPRD     LDA  $FFFF      ;DUMMY
9555: 8E 08 C0  246             STX  $C008      ;MAINZP
                247 *
                248 * ------ INCREMENT -------------
                249 *
9558: 91 CE     251 II          STA  (MB),Y     ;STORE
                252 *
955A: E6 FE     253 II0         INC  AB
955C: D0 02     254             BNE  II1
955E: E6 FF     255             INC  AB+1
9560: E6 CE     256 II1         INC  MB
9562: D0 02     257             BNE  II2
9564: E6 CF     258             INC  MB+1
9566: A5 CF     259 II2         LDA  MB+1
9568: CD 09 94  260             CMP  MAINEH
956B: 90 0B     261             BCC  II4
956D: D0 0C     262             BNE  NORMAL
956F: A5 CE     263 II3         LDA  MB
9571: CD 08 94  264             CMP  MAINEL
9574: F0 02     265             BEQ  II4
9576: B0 03     266             BCS  NORMAL
9578: 4C 97 94  267 II4         JMP  LOOP
                268 *
                269 *-------- NORMAL SWITCHES -------
                270 *
957B: 8E 02 C0  271 NORMAL      STX  $C002      ;MAINRD
957E: 8E 04 C0  272             STX  $C004      ;MAINWR
9581: 8E 08 C0  273             STX  $C008      ;MAINZP
9584: AE 81 C0  274             LDX  $C081      ;WRBK2
9587: AE 81 C0  275             LDX  $C081      ;RDROM
                276 *
958A: AD B4 95  277 RESTOREN    LDA  ZERO
958D: 85 CE     278             STA  MB
958F: AD B5 95  279             LDA  ZERO+1
9592: 85 CF     280             STA  MB+1
9594: AD B6 95  281             LDA  ZERO+2
9597: 85 FE     282             STA  AB
9599: AD B7 95  283             LDA  ZERO+3
959C: 85 FF     284             STA  AB+1
                285 *
959E: AD B8 95  286             LDA  REGISTER
95A1: AE B9 95  287             LDX  REGISTER+1
95A4: AC BA 95  288             LDY  REGISTER+2
95A7: 28        289             PLP
95A8: 60        290             RTS             ;EXIT
                291 *
                292 * AUX $200-BFFF MUST BE READ
                293 * FROM OUTSIDE $200-BFFF !!!
                294 *
95A9: 8E 03 C0  295 STACK2      STX  $C003      ;AUXRD
95AC: B1 FE     296             LDA  (AB),Y
95AE: 8E 02 C0  297             STX  $C002      ;MAINRD
95B1: 4C 58 95  298             JMP  II
                299 *
                300 * ZERO-PAGE SAVE AREA
                301 *
95B4: 00 00 00  302 ZERO        HEX  00000000   ;MB/AB
                303 *
                304 * REGISTERS A-X-Y SAVE AREA
                305 *
95B8: 00 00 00  306 REGISTER    HEX  000000     ;A-X-Y
```

Books, books, books - and yet more books

by Gene Stephan

Title: **The Apple //c Book**
Author: Bill O'Brien
Publisher: Bantam
Cost: $15.95
Size: around 270 pages
Available: Beagle CS

On the basis of the mass of paper which crosses this desk I feel I can safely say that the bulk of micro-computer books today are written by people I would strongly doubt to be knowledgeable users, let alone experts.

This is not the case with *The Apple //c Book.* The author is not anonymous to those who have read *A+, inCider, Creative Computing* or *Microcomputing.* He actually has been using micros for some time and has a fair idea of what he is talking about.

The book, as the title implies, is about the Apple //c and is written for people just starting out. In easily readable text, the first 57 pages give a good background to microcomputing from setting up the //c to explanation of disks.

From there the book progresses to Applesoft BASIC with some simple programming and graphics. There are no masses of code to be found, only snippets illustrating ideas, but there is a good description of what can be achieved if the user delves deeper.

The next chapters deal with the operating systems, both DOS and ProDOS.

Concise explanation

Explanation is concise without technicality. I thought the ProDOS chapter was particularly well done - you'll still need the manual, but it will make more sense. The DOS chapter on the other hand was a little skimpy, but somewhere a balance must be struck. After all, countless books have been written about Apple DOS, so how much can one expect in a chapter?

From there, the author describes hooking up the printer and using the modem. It is however the following sections I felt were the best in the book. 'Care and Feeding' and 'Troubleshooting' deal with what to do if the //c doesn't. There are good suggestions, tips and a list of the error messages one can periodically expect to find adorning one's screen.

The final section of the book goes into several of the software packages around, including Appleworks. I skipped this section as Appleworks is incompatible with the CP/M programs I use and so I felt any comment such as 'waste of space' might be biased.

All up, though I was not jumping up and down, I thought the book excellent value at the price and certainly a good choice to throw down next to a brand new //c, not only because it is totally readable, but also because it contains a wealth of background information.

"He actually has been using micro for some time and has a fair idea of what he is talking about"

Naming Your Facts: Database Terminology

Field	One unit of entered information. It could be someone's name, address, or any other piece of data.
Fieldname	A description of what you expect the contents of the field to be. In a simple address file it might be the word NAME.
Form or Screen	The name given to the collection of fieldnames as they are arranged. It is analogous to a paper form that has its own fieldnames and places to put information.
Record	A collection of related individual facts (fields). All the fieldnames you create gather information about one particular subject in a group of related elements. In your address list, one record would be all the information about one person.
File	The total collection of all the records in your database.

REVIEWS

Books, books, books and yet more books

Title: **Bit by Bit**
Author: Stan Augarten
Publisher: George Allen & Unwin
Cost: $19.95
Size: 320 pages
Available: Beagle CS

Here is a great book that should find its way onto the shelves of all computer lovers. It is an illustrated history of our sport, containing plenty of colour and black and white pictures of the old with a little new.

The book starts with the abacus and works its way up through mechanical adding machines to the valves and finally the ICs. If you're after Apple information this definitely is not the book for you. Although Apple grab the most micro space, you will need to wait till page 252 before you see one and a few more pages then before you get to read about it.

As a book, I found it enthralling. One particular section of history which has always fascinated me dealt with the British codebreakers in World War II. The section on the Turing machine and Turing himself, though light, is well done. The following section is an exerpt from the book:

"Turing was a very peculiar man, an unappealing mixture of boy genius and absent-minded professor. He was a gruff, gauche individual, with little concern for appearances. He usually looked as though he had just gotten out of bed, with a permanent five o'clock shadow (the sight of blood made him faint, so he rarely shaved), uncombed hair, and unkept fingernails. He held up his pants with ties instead of belts and all his clothes looked as though they came from thrift shops or rummage sales. He had a high, stammering voice and a crowing nervous laugh, and sometimes made odd squealing sounds when lost in thought, his mind almost visibly working. Deadly serious about his work, he tended to ignore people who weren't his intellectual equals; needless to say he had very few friends." (p145).

During the war however, Turing was perhaps the most important single figure at Bletchley Park, Britain's top secret installation where the German Enigma was broken. After the war, Turing drew up the specs for the most ambitious computer thus far - a machine with a huge 204,800 bit memory (about 26K) and enough odds and ends to fill a small hall. The picture is of a Manchester Mark I circa 1949.

Crossing to the other side of the Atlantic, things were still lagging behind however, six computers were being built including one named MANIAC (Mathematical Analyzer, Numerator, Integrator and Computer) - possibly the very first chess playing computer. However, the room full of machinery required several active operators while a game was in progress.

Then, there is some memorabilia. In the 1920s and 30s several companies in the States were marketing 'business machines' - typewriters, cash registers and the such. I thought the first logo of one of these companies would be of interest.

Returning to the book, I found it highly readable, well illustrated and excellently produced. Certainly, it is general enough to make a good gift for someone you want to get interested in computers.

Title: **Microsoft Basic for the Macintosh**
Author: L Goldstein and D Schneider
Publisher: Brady
Cost: $36.50
Size: over 560 pages
Available: Beagle CS

I believe a number of Macs these days are running Microsoft BASIC without manuals. How Microsoft could possibly omit to put manuals with all their software, let alone why these owners do not ring up Microsoft to complain, is totally beyond me. Yet, I am told they do exist and will probably be running out to buy this book as soon as they read the review.

Books, books, books, and yet more books

The book is divided into two parts - Part I, Microsoft BASIC for the Macintosh which is a tutorial, and Part II, MSBASIC commands, statements, functions and variables which is a very, very thorough explanation of all terms.

The tutorial section is divided into 10 chapters which deal with:

1. Getting started - how to start the system, enter lines and edit.
2. Controlling the program flow - structuring solutions to problems.
3. Working with data - arrays and input and output of data.
4. Easing programming frustrations - flowcharting, errors and debugging.
5. Your computer as a file cabinet - sequential and random access files.
6. String manipulation - ASCII codes and a do-it-yourself word processor.
7. Introduction to graphics - co-ordinates and pixels, drawing and sound.
8. Additional programming tools - the mouse, error trapping and chaining.
9. Numbers, variables and functions - background mathematics and functions.
10. Computer generated simulations - simulation of a computer store.

This should give you some idea of where Part I is aimed - the beginner, although the concepts built up are sound. Part II is a list, with exceptions.

Each term is (for the majority) explained in four parts. Under the term is a description and the term is used in a programming example. There then are comments on the term or its usage, and finally, applications are given. The format is open, so while a term like BEEP occupies half a page and has three lines in the example and two each of comments and applications, INPUT covers five pages, has thirteen examples, twelve comments and three applications.

I am not partial to sitting down in a comfortable armchair (computer handy) and reviewing manuals. The attention span when reading what one piece of syntax will do under one set of conditions and another under another set of conditions is not my idea of a good time - I should have passed the book to Andy Hughes. What did however impress me about this book was the thoroughness that the topic was dealt with . It looks as though absolutely nothing has been omitted.

Simulation of a Computer Store *(listing continued on next page)*

```
10 'Initialization
20    DIM TRAFFIC(20),WALKOUT(15),CUST(15)
30    RANDOMIZE VAL(RIGHT$(TIME$,2))
40    'Read arrival data
50       DATA 10,15,15,40,30,10,10,8,25,50,45,30
60       FOR HOUR=9 TO 20
70            READ TRAFFIC(HOUR)
80       NEXT HOUR
90    'Read walkout data
100      DATA .2,.2,.3,.3,.4,.4,.4,.5,.6,.65,.7,.75,.
             75,.75,.75
110      FOR LNE=1 TO 15
120            READ WALKOUT(LNE)
130      NEXT LNE
140   'Initialize Variables
150      LNE=0
160      MAXLINE = 0
170      LOSTCASH = 0
180      CASHFLOW = 0
190      CUSTSERVED = 0
200   '*************Main Program**************
210   CLS:PRINT "SIMULATING. PLEASE WAIT."
220   FOR HOUR = 9 TO 20
230      FOR MINUTE = 0 TO 56 STEP 4
240         'Update clock
250          IF MINUTES = 0 THEN GOSUB 570: 'Plan hour
260          SEG = MINUTES/4 + 1
270          'Simulate arrivals for current 4 minute segment
280          FOR J=1 TO CUST(SEG)
290             GOSUB 390
300          NEXT J
310          'Simulate customers served
320          GOSUB 490
330      NEXT MINUTE
340   NEXT HOUR
350   'Compute daily statistics
360      GOSUB 660
370 END
380 '*************Subroutines**************
390 'Arrival of one customer
400      IF LNE > 15 THEN L=15 ELSE L=LNE
410      IF RND>WALKOUT(L) THEN 420 ELSE 460
420      'Customer stays
430               LNE=LNE+1
440               IF LNE>MAXLINE THEN MAXLINE=LNE
450               GOTO 480
460      'Customer leaves
470               LOSTCASH=LOSTCASH+30
```

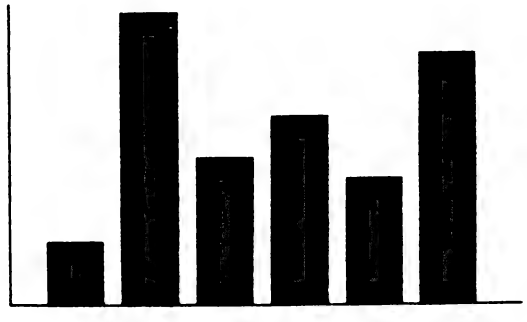
REVIEWS

Books, books and yet more books

Simulation of a Computer Store *(continued)*

```
480 RETURN
490 'Wait on Customers
500  FOR J=1 TO 2
510              IF LNE=0 THEN 550
520              LNE=LNE-1
530              CASHFLOW=CASHFLOW+30
540              CUSTSERVED=CUSTSERVED+1
550  NEXT J
560     RETURN
570 'Plan Customer Arrivals for Next Hour
580    FOR SEGMENT=1 TO 15
590             CUST(SEGMENT) = 0
600    NEXT SEGMENT
610    FOR I=1 TO TRAFFIC(HOUR)
620        X = INT(15*RND)+1
630        CUST(X) = CUST(X) + 1
640    NEXT I
650 RETURN
660 'Print Summary of Day
670     CLS
680     PRINT
690     PRINT "CASH FLOW"; TAB(30) CASHFLOW
700     PRINT "CUSTOMERS SERVED"; TAB(30) CUSTSERVED
710     PRINT "CUSTOMERS NOT SERVED";
        TAB(30) 288-CUSTSERVED
720     PRINT "LOST CASH"; TAB(30) LOSTCASH
730     PRINT "MAXIMUM LINE"; TAB(30) MAXLINE
740 RETURN
```

LINE.EH4



List

```
10 CLS
20 LINE (24,16)-(24,160)
30 LINE -(300,160)
40 FOR M=0 TO 5
50 READ A
60 R=45+M*40
70 S=75+M*40
80 T=160-10*A
90 LINE (R,160)-(S,T),,BF
100 NEXT M
110 DATA 3,14,7,9,6,12
```

Title: **Applesoft Subroutine Cookbook**
Author: David Busch
Publisher: Brady
Cost: $27.50
Size: over 180 pages
Available: Beagle CS

In the last issue, Gareth had some shockers to review. This time all the books have been very good. The *Applesoft Subroutine Cookbook for the Apple II, II+, IIe and //c*, to give the full title, is no exception. And, it is written by a person with over 300 computer articles or programs to his credit.

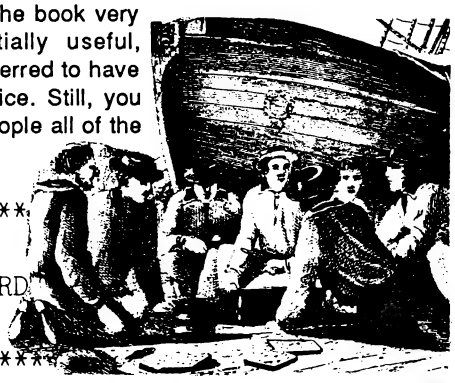
The book is not one to sit down and read - rather it should reside in close proximity to the computer when you are writing BASIC programs. Much time, effort, mental turmoil and anguish can be saved when tried and tested routines are at the fingertips. This book provides just those.

There are eight chapters, the bulk of which are code and explanation.

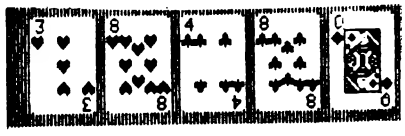
1. Subroutine magic and merging tricks - use of text files and EXEC.
2. Bombproof data entry - line, number, letter input and case convert.
3. String manipulation - replacing, inserting, swapping, encoding strings.
4. Number crunching - number sorts and conversions.
5. Game routines - paddles, keyboard, joystick, dealing cards.
6. Introduction to graphics - lo & hi res, lotting and animation.
7. Using sound - heartbeats to horses.
8. Business and financial - text read/write, loans, payments and dates.

In all, there are about 60 subroutines given, but those contemplating buying this book must remember subroutines are not stand-alone programs. To get the most from a book such as this, you must be prepared to get your feet wet and write some code. Some help is given, under about six subheadings - What it does, Variables, How to use subroutine, Line by line description, You supply and Result, but the complete program is left up to you.

To sum up, I did find the book very interesting and potentially useful, though I would have preferred to have seen a slightly lower price. Still, you can't please all of the people all of the time ...



```
10 REM ***********
20 REM *
30 REM * DEAL CARD
40 REM *
50 REM ***********
60 REM ----------------------
70 REM     ++ VARIABLES ++
80 REM     DECK$(N): DECK
90 REM     CARD$:    CARD DRAWN
100 REM    DRAW:     RANDOM CARD
110 REM
120 REM ----------------------
130 DIM DECK$(52)
140 DATA "Hearts","Spades","Diamonds",
         "Clubs"
150 REM *** READ SUITS ***

160 FOR N=1 TO 4
170 READ SUIT$(N)
180 NEXT N

200 REM *** ASSEMBLE DECK ***

210 FOR SUIT=1 TO 4
220 CU=CU+1
230 DECK$(CU)="ACE OF "+SUIT$(SUIT)
240 CU=CU+1
250 DECK$(CU)="KING OF "+SUIT$(SUIT)
260 CU=CU+1
270 DECK$(CU)="QUEEN OF "+SUIT$(SUIT)
280 CU=CU+1
290 DECK$(CU)="JACK OF "+SUIT$(SUIT)
300 FOR N=2 TO 10
310 CU=CU+1
320 DECK$(CU)=STR$(N)+" OF "+SUIT$(SUIT)
330 NEXT N
340 NEXT SUIT
350 NC=52
360 GOTO 470
365 REM *** SUBROUTINE ***

370 IF NC<>0 GOTO 410
380 CARD$=""
390 PRINT"DECK GONE!!"
400 RETURN
410 DR=INT(RND(1)*NC)+1
420 CARD$=DECK$(DRW)
430 DECK$(DR)=DECK$(NC)
440 NC=NC-1
450 RETURN

460 REM *** YOUR PROGRAM STARTS HERE ***

470 PRINT
480 GOSUB 370
490 PRINT CARD$
```



```
10 REM *************
20 REM *           *
30 REM * HEARTBEAT *
40 REM *           *
50 REM *************

140 GOTO 270

150 REM *** SUBROUTINE ***

160 FOR N1=1 TO 20
170 FOR N2 =1 TO 5
180 A=PEEK(49205)
190 NEXT N2
200 FOR N=1 TO 200:NEXT N
210 FOR N3=1 TO 15
220 A=PEEK(49200)
230 NEXT N3
240 FOR N=1 TO 600:NEXT N
250 NEXT N1:RETURN

260 REM *** YOUR PROGRAM STARTS HERE ***

270 GOSUB 160
```

PROGRAM

Periodic decimal fractions with computers

by Charles P. Binder

The conversion of common fractions is a familiar practice. These common fractions can be expressed as repeating decimals that fall into two categories:

1."Terminating decimals" that end with repeated zeros

2."Non-terminating decimal" that repeat non-zero groups of digits

The denominator determines whether the fractions will be terminating or non-terminating. Let us see why.

Consider only the common fractions that are reduced to lowest form, that is, fractions whose numerators and denominators share no common factors other than one. Those fractions that terminate have denominators that contain no prime factors other than two and five, for example,

1/2 = 0.50 1/4 = 0.250

1/20 = 0.050 1/25 = 0.040

This pattern can be verified if we transform each to a fraction whose denominator is a power of ten.

1/2 = 5/10 1/4 = 25/100

1/20 = 5/100 1/25 = 4/100

This "transformation" can only be accomplished when the initial denominator "divides" a power of ten or, more properly, if it is a factor of a power of ten.

Prime factors

Nonterminating decimals result when the denominator of the fraction contains prime factors that do not divide a power of ten. For these decimals, groups of non-zero digits are repeated. The length of the group is called the period and is a function of the magnitude of the denominator. The maximum period of an expansion is one less than the denominator. Thus, if the denominator is 7, the maximum period is 6.

In division, the remainder determines the repetition. If the fraction were x/y, the period would be determined as soon as a remainder (in the subtraction process of the division algorithm) appeared twice. With y as the denominator, the range of possible remainders is 0 through y - 1. Discounting 0 as a remainder, since it would lead to a terminating decimal, we have y - 1 different remainders and, at most, y - 1 opportunities for repetition.

Example

Let's examine the fraction 3/7 as an example. Begin in the division algorithm by recording a quotient of 0.4. In the subtraction that follows, the remainder can only be one of six different possibilities (the digits 1 through 6). If the remainder were greater than 6, we would have to admit that our quotient was "too small" and begin again with a larger quotient.

Program 1 is written in BASIC; it should run on any computer system. Normally, any division performed with a computer is limited to the number of decimal places the language allows (usually 6); however, this program will allow the display of 100 digits (or more if desired) in the expansion of the fraction. Sample output appears in table 1.

Concepts

The computer offers an ideal opportunity for students to discover these concepts themselves. Students can easily input different fractions and observe, first-hand, the consequences of varying the denominators. They can quickly generate sufficient cases for analysis.

Explanation of the program

1. This program will carry out division to display 100 decimal places; altering the last value in line 90 will permit the user to modify the number of decimal places displayed.
2. After the data are entered in line 60, A is assigned the integral value of the quotient.
3. Line 80 begins the printing process by printing the original fraction and the integral part of the quotient with the decimal point.
4. The loop contained in lines 90-120 generates the remaining decimal digits and prints them one at a time. The process used is similar to that performed in the mechanical process of the division algorithm: the product of the previous quotient (A) and the divisor (D) is subtracted from the existing dividend (N), whereupon it is multiplied by 10 to keep the result an integral value.
5. Line 110 repeats the division process by assigning A the integral part of the quotient, and line 120 prints out this digit.

PROGRAM

TABLE 1

Sample Output

```
 3 / 7 =0 . 4 2 8 5 7 1 4 2 8 5 7 1 4 2 8 5 7 1
  4 2 8 5 7 1 4 2 8 5 7 1 4 2 8 5 7 1 4 2 8
 5 7 1 4 2 8 5 7 1 4 2 8 5 7 1 4 2 8 5 7 1 4
 2 8 5 7 1 4 2 8 5 7 1 4 2 8 5 7 1 4 2 8 5 7
 1 4 2 8 5 7 1 4 2 8 5 7 1 4 2 8 5

 5 / 17 =0 . 2 9 4 1 1 7 6 4 7 0 5 8 8 2 3 5 2
9 4 1 1 7 6 4 7 0 5 8 8 2 3 5 2 9 4 1 1 7 6
 4 7 0 5 8 8 2 3 5 2 9 4 1 1 7 6 4 7 0 5 8 8
 2 3 5 2 9 4 1 1 7 6 4 7 0 5 8 8 2 3 5 2 9 4
 1 1 7 6 4 7 0 5 8 8 2 3 5 2 9 4 1

 4 / 23 =0 . 1 7 3 9 1 3 0 4 3 4 7 8 2 6 0 8 6
9 5 6 5 2 1 7 3 9 1 3 0 4 3 4 7 8 2 6 0 8 6
 9 5 6 5 2 1 7 3 9 1 3 0 4 3 4 7 8 2 6 0 8 6
 9 5 6 5 2 1 7 3 9 1 3 0 4 3 4 7 8 2 6 0 8 6
 9 5 6 5 2 1 7 3 9 1 3 0 4 3 4 7 8
```

PROGRAM 1

```
10 REM   CARRIES OUT DIVISION TO 100 DECIMAL
          PLACES
20 REM   TO ALTER NUMBER OF DECIMAL PLACES
          PRINTED,
30 REM   CHANGE THE LAST VALUE IN LINE 90
40 REM
50 PRINT "ENTER THE NUMERATOR AND
          DENOMINATOR"
60 INPUT N,D
70 A = INT(A/D)
80 PRINT N;" ";D;" = ";A;".";
90 FOR I = 1 TO 100
100      N = (N - D*A)*10
110      A = INT(N/D)
120       PRINT A;
130 NEXT I
140 END
```

Dealer Directory

VisiCalc Magic

Ralph Morgan explains some VisiCalc techniques that are not in the official handbook.

This article will deal with a Visicalc technique which has been little publicised and which gets no mention in the VisiCalc 'goto' function (>), the 'pound' function (#) and the /PF function (print to file). We will show how these three functions can be used together to provide a powerful tool.

This article is more relevant to users of the earlier version of VisiCalc. The advanced version contains a keystroke memory function which gives a similar result. However this technique can still be used with the advanced version.

We shall show how to build a VisiCalc model which can maintain cumulative totals in one set of cells each time new data is entered into another set of cells to which the first set are linked. The model will be a simple statement of receipts and payments compared against a budget, together with cumulative totals for the period to date.

In order to get the correct results, the examples shown should be copied exactly as they appear and saved to disk as shown.

With a clear screen set recalculation to manual with /GRM and copy in example 1. Formulae should be entered in columns E and H and in rows 12, 19, and 21. In the columns the formula is + D8 - C8 etc or + G8 - F8 etc, in the rows 12 and 19 it is the sum of rows 8 to 11 and rows 15 to 18; in row 21 it is + C12 - C19 etc. Save the model as /SSBudget and clear the screen.

In the next step we are going to create a datagram. What is a datagram? A datagram is a VisiCalc text file of instructions which, when loaded over the model, will allow you to enter new data and update the old.

With a clear screen enter /GFR/GC20. This will give you a column 20 characters wide in which the label entries will be right justified. All entries in a datagram must be in label mode. This is the first essential in writing a datagram. Next copy in example 2 making sure that every line after the title is entered as a label; that is, at the beginning of every subsequent line use either the (") function as recommended in the manual or 'q' 'esc' if you are familiar with this easy way of entering a label which begins with a value or value symbol. This is the second essential in writing a datagram. Check that your screen looks exactly like the example and then save to disk as /SSBudget.SS.

Without making any changes, save the same screen to disk in the 'print to file' format (/PF). To do this move the cursor to row 4 and enter /PF, when asked for a filename enter Budget.PF and press return. Next you will be asked for the lower right co-ordinate; move the cursor to the last row of the datagram and press return. Now let us see some magic in action. Clear the screen and load your first file (/SLBudget). Now, without clearing the screen, load the file we called Budget.PF using the command /SLBudget.PF. The model will temporarily disappear from the screen to be replaced by the modified screen shown in example 3. We now enter the new data. The cursor comes automatically to cell B4 each time 'Budget.PF' is loaded to let you to enter the new date

'Example 1

	A	B	C	D	E	F	G	H
1								
2				COMBINED BRANCH ACCOUNTS				
3				IN $'OOO				
4	MONTH . . . MARCH '85							
5			<------THIS MONTH----		--->	<-------YEAR TO DATE------->		
6			BUDGET	ACTUAL	VARIANCE	BUDGET	ACTUAL	VARIANCE
7	RECEIPTS							
8	BRANCH A		50	51	1	155	159	4
9	BRANCH B		60	63	3	185	189	4
10	BRANCH C		70	69	-1	220	218	-2
11								
12	TOTAL RECEIPTS		180	183	3	560	566	6
13	PAYMENTS							
14	WAGES		48	50	2	150	152	2
15	COMMISSION		6	5	-1	18	19	1
16	RENT		25	25	0	75	75	0
17	OTHER EXPENSES		25	28	3	72	77	5
18								
19	TOTAL PAYMENTS		104	108	4	315	323	8
20								
21	PROFIT BEFR TAX		76	75	-1	245	243	-2
22								

Visicalc Magic

before entering the new data. Enter the new budget and actual figures shown below:

C8:62	C16:5	D:14 :66
C9:75	C17:48	D15:14
C10:130	D8:65	D16:4
C14:65	D9:71	D17.50
C15:1	D10:132	

Press recalculate (!) and hey presto the year to date figures have been updated and your screen should look like example 4. If it does, save to disk with /SSBudgetApril, this will be the basis for your next month's update. If your screen does not look like the example check your entries and then clear the screen and load file Budget.SS and carefully re-check the entries. If you have to make any alterations save the new screen as Budget.SS over the old one and then again as Budget.PF as shown above. **Note: you cannot make alterations directly on to a PF file.** That's all. After you have mastered the datagram there will be any number of areas in which you can make use of this technique. If you have any queries or want further information about this technique I will be pleased to assist.

Example 2

```
1       DRIVE FOR
2  BUDGET MODEL
3
4     >B4:".....
5
6              >C8:0
7              >C9:0
8             >C10:0
9             >C14:0
10            >C15:0
11            >C16:0
12            >C17:0
13
14             >D8:0
15             >D9:0
16            >D10:0
17            >D14:0
18            >D15:0
19            >D16:0
20            >D17:0
21
22          >F8:#+C8
23          >F9:#+C9
24         >F10:#+C10
25         >F14:#+C14
26         >F15:#+C15
27         >F16:#+C16
28         >F17:#+C17
29
30          >G8:#+D8
31          >G9:#+D9
32         >G10:#+D10
33         >G14:#+D14
34         >G15:#+D15
35         >G16:#+D16
36         >G17:#+D17
37
38          /X:>A1:
39            >B4:
```

Example 3

	A	B	C	D	E	F	G	H
1								
2				COMBINED BRANCH ACCOUNTS				
3				IN $'000				
4	MONTH							
5			<——THIS MONTH——		—>	<——YEAR TO DATE——>		
6			BUDGET	ACTUAL	VARIANCE	BUDGET	ACTUAL	VARIANCE
7	RECEIPTS							
8	BRANCH A		0	0	0	155	159	4
9	BRANCH B		0	0	0	185	189	4
10	BRANCH C		0	0	0	220	218	-2
11								
12	TOTAL RECEIPTS		0	0	0	560	566	6
13	PAYMENTS							
14	WAGES		0	0	0	150	152	2
15	COMMISSION		0	0	0	18	19	1
16	RENT		0	0	0	75	75	0
17	OTHER EXPENSES		0	0	0	72	77	5
18								
19	TOTAL PAYMENTS		0	0	0	315	323	8
20								
21	PROFIT BEFR TAX		0	0	0	245	243	-2
22								

Example 4

	A	B	C	D	E	F	G	H
1								
2				COMBINED BRANCH ACCOUNTS				
3				IN $'000				
4	MONTH . . . APRIL '85							
5			<——THIS MONTH——		—>	<——YEAR TO DATE——>		
6			BUDGET	ACTUAL	VARIANCE	BUDGET	ACTUAL	VARIANCE
7	RECEIPTS							
8	BRANCH A		62	65	3	217	224	7
9	BRANCH B		75	71	-4	260	260	0
10	BRANCH C		130	132	2	350	350	0
11								
12	TOTAL RECEIPTS		267	268	1	827	834	7
13	PAYMENTS							
14	WAGES		65	66	1	215	218	3
15	COMMISSION		14	14	0	32	33	1
16	RENT		5	4	-1	80	79	-1
17	OTHER EXPENSES		48	50	2	120	127	7
18								
19	TOTAL PAYMENTS		132	134	2	447	457	10
20								
21	PROFIT BEFR TAX		135	134	-1	-720	377	-3
22								

Visicalc Magic

Finetuning your Macintosh

by Gareth Powell

The problem with the Macintosh is that it is such an innovative machine both users and programmers take a long time getting used to all its possibilities and then using them. It would be wrong to call this a learning curve. The Macintosh has the shortest learning curve of any computer on the market.

Perhaps we should call it an user familiarity curve.

Take the example of the desk accessories which are incorporated into every Macintosh. All users know they are there, most users know how to operate them in a basic way, many users know how to use them properly, few users ever do so.

Which is a pity. Because their existence puts the Macintosh one step ahead of all other competing personal computers. Why pay money for powerful features and then let them lie idle?

Let us do a little exploring and see see what we can find.

If you use the mouse to place the arrow over the "apple" at the top of the screen, you get a pull down menu full of helpful extras.

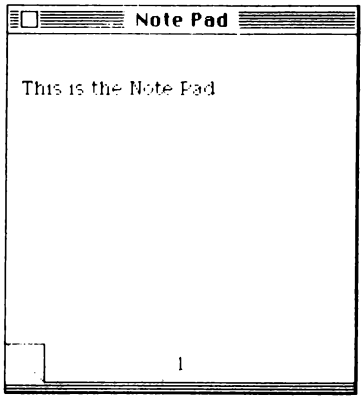
Starting at the top is "About the Finder", which is a piece of hype for Apple or the program's writers and can safely be ignored.

Then comes "Scrapbook", essential if you want to incorporate the full power of, say, *MacDraw* with a word processing program or, indeed, the output of any program with the output of any other program.

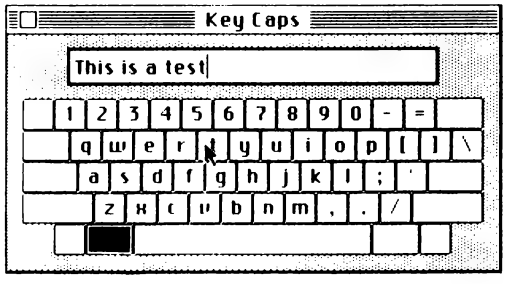
It allows you with relative ease to move bit map information from one program to another. This is especially useful if you are trying to incorporate some of the illustrations from a MacDraw program into your writing to make the dull prose come alive with pictures.

Next comes Alarm Clock. I use this one all the time - I don't know anyone else that does. It is a matter of moments to select the alarm clock, type in the time of your next appointment and then switch back to what you are doing in the first place. Then, even if you are deeply absorbedi n the arms of the Muse (take that any way that you want to) you will be smartly brought back to reality at the appropriate time.

Next down is "Note Pad". I use it a lot to take telephone messages. I am working on an article and the phone rings. I select notepad and make a few

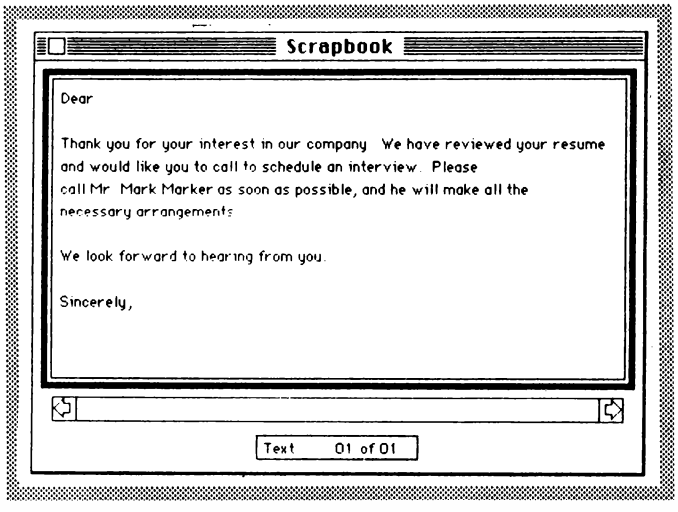


notes about what action I should take as a result of the call, and then I click right back into my working document, at the precise point that I left it.



One more step down and we come to "Key Caps".

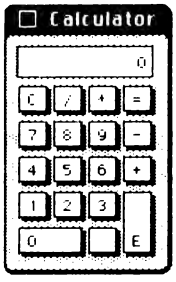
You may never need to use the sign for pounds sterling - although I do - but it is nice to know that it is readily available by depressing two keys. And that the same is true of the sign for Japanese yen, and the scientific symbol for omega and lots of other keys which may or may not come in handy. The point of "Key Caps" is that you do not have to remember exactly what key to press - the program is a built-in guide to what is available.



To the left, the Scrapbook, which is a most important device. Learning to use this feature properly is one of the keys to getting the best use out of your Macintosh. We will be publishing an article on Scrapbook manipulation in the next issue.

Finetuning your Macintosh

The "Calculator", the next on the list, saves a lot of time if you are working on a spreadsheet because it allows you to nip out of the spreadsheet, make a quick calculation, and nip back in again.True, you could do that with a separate calculator, but with the Macintosh calculator you can take the result with you and paste it into the precise position on the spreadsheet - which cuts down on the possibilities of error.



Once you get used to using the calculator you will find it indispensable.

Next we come to the "Control Panel" which allows you to customise to a certain extent the way the Macintosh responds to your personal needs.

"These are all standard desk accessories which come with all Mac programs. But, if you like, you can add extra programs to the desk accessory set to customise it to your exact needs."

You can turn the sound up and down. I find this extremely important as I have become addicted to playing *Airborne.* At the beginning there is a digitized piece of Wagner which I find totally unbelievable.

I have a loudspeaker fitted into my Mac - there is a socket specially for that purpose at the back - and I turn the volume right up so that my machine sounds like a ghetto blaster at full chat.

Which is fine when I am playing *Airborne* and the helicopters and the jet fighters are zooming through my living room like a replay of *Apocalypse Now.*

But not so jolly when I am working away at a spreadsheet and the Macintosh gives forth a beep that would waken the dead. So almost the first thing I do when I switch on my Macintosh is to make sure that the volume is suited for the purpose.

There are several other adjustments you can make. You can have the mouse in one or two modes of sensitivity. I always have it at the higher level - 1 - and would wish that there was even more adjustment.

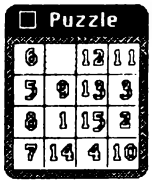
You can adjust the keyboard to suit your typing style. I have it on the highest setting because I am an extremely quick typist.

I also set the repeat key as high as it will go so that I don't sit there waiting for the lines I draw in copy with the underline key , taking for ever.

Lastly, I set the double click speed to its highest setting simply because I am so used to using the little beast I haven't the time to press in two slow clicks.

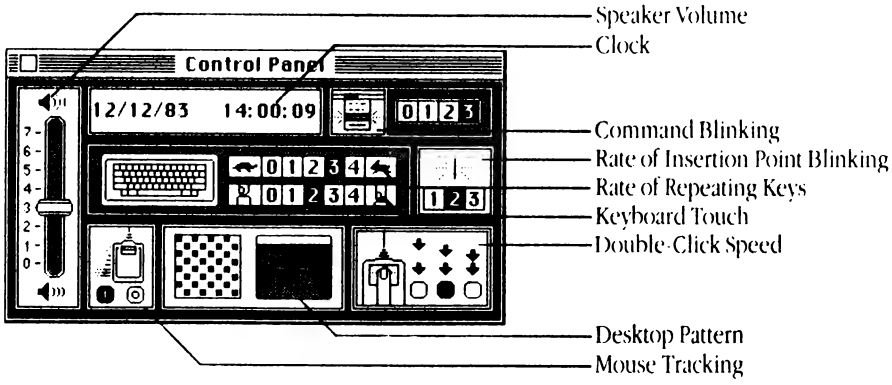
Other computers let you do some customising to suit your individual style. But none do it with the scope and elegance of the Macintosh.

Last on the standard set of desk accessories is the "Puzzle" . I started off thinking that this was all childish nonsense and that a grown chap llike myself shouldn't be bothered.



But when I am on a long telephone call waiting for one to reply, then I find doodling with the "Puzzle". My record speed for solving it at the moment is 43 seconds. Any challengers are invited to write in and have their names engraved in the Macintosh Hall of Useless Pursuits Fame.

These are all standard desk accessories which come with all Mac programs. But, if you like, you can add extra programs to the desk accessory set to customise it to your exact needs. This is especially true with the latest version of "Finder" which has a desk accessory mover built-in.



MACINTOSH

Finetuning your Macintosh

I was first introduced to this feature by the Mac-crazed William Bullock. He had a calculator built into his which let him do hex to decimal conversions on the fly. Since then I have been collecting Mac desk accessory programs wherever I could find them. Some of them are extremely useful, some rather less so. And one is totally useless, annoying and infuriating and I love it.

This comes from Videx and is called, with great precision, the "Bugs" option.

Click once and bugs start to work their way across the screen, taking over the computer and driving you quietly

---

"Some of them are extremely useful, some rather less so. And one is totally useless, annoying and infuriating and I love it."

---

barmy. You can't get rid of them without switching off the machine and starting again. The suggestion has been made that I must be mentally sick to enjoy so much such an accessory. I do not totally refute that suggestion.

More useful but less entertaining is "Appointment Book" from MegaHaus. (At the moment I am rather cross with MegaHaus because they released one program with an enormous bug in it which cost me countless wasted hours and a fairly substantial amount of goodwill. But I will not bear a grudge.) It looks and operates exactly like a standard desk calendar with a built-in

Finetuning your Macintosh

little notepad to remind you of things that you must do. In it, as it says in the sixteenth century morality play, "Everyman", you can write "Your many bad deeds, and good but a few".

If you use the Mac the way that I do, switched on all day with screen dimmed while I am doing other things, then this accessory is invaluable.

If you don't need the full bit then "Calendar", available through user groups, will probably serve you just as well.

"The standard desk accessory set is automatically placed on every disk you make unless you strip it off - and the standard set takes 17K of disk space."

There are several other programs ranging from a financial calculator to a mock terminal, from an executive decision maker which works just like tossing a coin to a new puzzle which, in my opinion, is about as inspiring as the old one - and that's not saying much.

Some points to remember about these desk accessories.

The first is that the standard desk accessory set is automatically placed on every disk you make unless you strip it off - and the standard set takes 17K of disk space. Some of the non-standard programs take up a lot more than this. As far as I know the largest program allowable as a Desk Accessory is 32K and this, of course, will only work with the FatMac.

The slab of information which is the Desk Accessory is only accessed from the disk when it is needed - it is not permanently carried in memory. But when disk space is at a premium, as it is in so many programs that are equipped to work the LaserWriter and the ImageWriter, you may need to have specific desk accessory sets for specific programs, only incorporating those features that are truly useful to you. To do this you need either the Resource Editor, which Apple have very intelligently placed in the public domain, or another program "Desk Accessory Mover" which is commercially available.

You can strip all of the accessories bar one out of any program if you are really desperate for disk space. You have to leave one in or the system, for reasons which are not totally clear to me, will crash every time you boot.

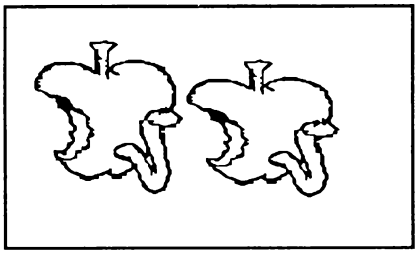
If you are going to use the Mac as an everyday working tool - and you truly should - then you can maximise its efficiency by using the Standard Desk Accessory set with perhaps some custom modifications.

The best way you can find out exactly what suits you is to experiment until you find a combination you are happy with. That is what I have done and it has considerably increased the utility of my Macintosh.

When, not if, we get the 2 megabyte Macintosh and when, not if, I get around to saving up my bikkies and buy a 20 Megabyte hard disk, then I am going to have a load of time-saving accessories on my machine. Mark you, much of that gain will be negated by my addiction to the "Bugs" program, but you can't expect me to get everything right first time, can you?

UNMITIGATED GALL

Worm in the Apple



And so they have laid the Lisa to rest. This Worm, the only person in Australia to agree with the name change from Lisa to Macintosh, cannot quite understand what is behind Apple's corporate thinking. It is not for this lowly Worm to question the decisions of senior American executives, who have been trained at Business Schools so that they are able to come to the right decision in nano-seconds.

Like the decision that the Apple III would kill the Apple II in six months and that therefore all development on the Apple II should cease.

No doubt that decision was supported by tabulated charts and documents and discounted cash flow analyses and market surveys and future sales projections.

No doubt.

And that decision was wrong.

This Worm thought it was wrong at the time. And said so. But those that dwell in the hallowed towers of Cupertino, from which all wisdom comes, do not listen to worms.

***

This Worm has just travelled to Darwin to see the sights and to discuss this and that with Fiona Moore, The extremely intelligent, knowledgeable and, if I may make so bold, toothsome lady at Kent Electronics and Keyboards, the official Apple dealers for most of the Top End. The bottom bit of the Top End is taken care of from Alice Springs, or The Alice as it is referred to in lower forms of literature.

Fiona is an Apple fanatic and a most persuasive sales person. It was I who broke the news to her about the passing of the Lisa. Fiona is every inch a lady and no word that would offend even the most moralistic listener would pass her rosebud lips.

But just for a moment there, just for a second, this Worm fancied that Fiona muttered a naughty word at the news.

I can understand Fiona's dismay. Here is a machine, only a year or so ago called the Computer of the Year, which has a perfectly upgradable path from the Macintosh and which looks right for the business environment and, with the deluge of Mac business programs pouring forth, is now a truly viable machine. And because it has a large megabyte of memory it works much faster than the Macintosh and already has a proven hard disk system.

I am sure the forward planners at Cupertino have got their sums right. After all, world wide the Lisa was not a smash hit. But this Worm has a feeling that if only Apple had not made an announcement, but just carried on selling the Lisa/Macintoshes they had in stock, they might have had a wonderful surprise at the way in which sales started to pick up.

***

A new machine will be announced at about the time current stocks of the Mac/Lisa run out, and your guess is as good as anyone's what its specifications will be, Certainly, yours will be better than this humble Worm's.

But none of this guesswork will make the job of selling the Mac/Lisas that are left any easier for the delectable Fiona Moore and all the other legal and reputable Apple dealers.

***

As will become apparent as time goes by, this Worm is becoming obsessed with the Macintosh and is willing to tell all and sundry it is the way of the future.

But even this enthusiastic Worm will admit the Mac could do with a good hard disk drive. And although this Worm positively grovels at the thought of his own technical incompetence, yet he realises that information transmitted serially goes slower than information transmitted in parallel.

It is almost exactly the difference between a single track road and a 16 lane super-highway. (Do not write abusive letters to this cringing Worm pointing out that the central processing unit chip of the Macintosh is 32 bit. I know that. But it only operates like that indoors. When it goes forth into the harsh world outside it steps forward at a more decorous 16 bits).

At the moment, when you hang a hard disk on the Mac you use a serial port and the speed of transfer of information is less than felicitous.

And so the ranks of Tuscany could scarce forbear to cheer when the news came that the General Computer Company in Cambridge in the United States had come up with a 10 megabyte hard disk drive that they build-in to the Macintosh, leaving the standard disk drive in position. And because its interface logic board is directly connected to the Mac's main circuit, it operates at blinding speed (would you believe 20 times faster than a floppy, seven times faster than an external hard disk drive).

The Worm's American cousin says there is a slight problem. It doesn't work properly at the moment. The problem is heat build-up. The Macintosh has been designed not to

UNMITIGATED GALL

need a fan. This Worm leaves his on day and night, merely cutting down the image on the screen when it is not in use. And has never any problems - yet.

But even this Wom can see that putting a ten megabyte hard disk into the space available could create problems. One presumes it is back to the drawing board for the General Computer Company.

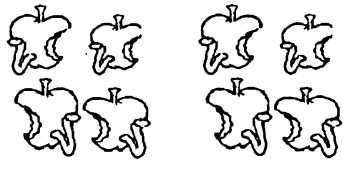
More reports from my transPacific cousin indicate the way of the future. A company in California called Micro-Graphic Images is upgrading the Mac to over a megabyte of memory instead of the half a megabyte of memory in the Fat Mac. Presumably this version of the machine will be called Obese Mac.

In passing, it is worth noting that the 256K bit chips may shortly be replaced by 1 Megabit chips which will quadruple the memory available in the twinkling of an eye. This is a Worm's guess, not a company announcement from Cupertino. There is a difference. In fact, if you want to take this to its logical conclusion the end game will be a Macintosh with 2 Megabytes of memory as standard RAM.

It is difficult to tell from the publicity, but my cousin thinks this is more in the nature of an electronic RAM disk than a true extension of accessible memory. But there is little doubt in this Worm's mind that the day of the 1 or 2 megabyte Mac cannot be far off. We'll possibly see it at the same time that we see an Apple produced colour Macintosh.

How about January next year as a possible date?

It will coincide with the Apple Annual General Meeting and will give head honcho Sculley something with which to encourage the troops. This Worm's humble guess is that there may be all sorts of announcements in order to give the company an extra burst.



Ultimate deterrent

At long last this Worm has found his way into the Stately Pleasure Dome in Ryde where Apple Australia resides in sybaritic and sinful luxury. All the people there are pleasant souls who are helpful to the nth degree. Clean cut, sparkling members of the human race striding forward to meet a better tomorrow.

And yet there is a Worm in that Paradise. A Worm who is no relation of mine. This Worm is in charge of the coffee machine. With all the modern equipment they have on the premises why then do they put up with the worst coffee served anywhere in the world with the possible exception of Southern Albania?

This Worm had to make a quick exit and grab a cup of coffee at the nearby Digger's sandwich bar so that the nasty taste could be removed from the mouth.

The suggestion has been put forward that this is a deep laid plot of Dennis Bignold's to keep unwelcome visitors away from the Stately Pleasure Dome.

Surely he wouldn't go that far.

Surely.

Was Rembrandt really an Australian?

It's easy to see why one American reviewer got our all-Australian software confused with a European masterpiece. Our programs have been praised in England and pirated in Taiwan. In Australia, they've been used and used and used. We want to make more all-Australian programs that are solidly useful.

The success we've had is enabling us to do just that. We have been forming a team of talented programmers whose sole aim is quality. We're preparing a series of masterpieces. None of them will be paintings, all of them will be the finest programs for the finest computers. They will all bear the name Zardax, as your guarantee of quality.

What's all this got to do with Rembrandt? Read on.

— *"this word processor is a piece of cake to use." Infoworld 22/2/82*
— *"superbly easy to use, quick, convenient." PCAL Report Dec 83*
— *"in many ways better than a dedicated word processor." The Australian 31/3/84*
— *"if word processing is an art, Zardax is a Rembrandt." In-Cider March 83*
— *"highly recommended." Softalk Jan 84*
— *"Zardax wins praise for being well-nigh bulletproof." Your Computer April 84*

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Zardax Word Processor I — for Dos. 3.3 on the Apple II computer
Zardax Word Processor II — for ProDOS on the Apple //e and //c
Zardax Word Processor III — for the Apple /// computer
Zardax WRITER — a new generation program for the IBM PC

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